Broadband USA

Broadband Infrastructure Application
Submission to RUS (BIP) and NTIA (BTOP)

[FINAL]

Submitted Date: 8/17/2009 8:17:11 PM	**Easygrants ID: 1410**
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Page County Broadband Authority
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Tom M Cardman

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A. General Application Information

1. Applicant Information	
1-A. Name, Address, and Federal ID for Applicant	
i. Legal Name:	Page County Broadband Authority
ii. Employer/Taxpayer Identification Number (EIN/TIN):	270627697
Street 1:	117 South Court Street
Street 2:	
City:	Luray
County:	United States
State:	VA
Country	United States
Zip/Postal Code:	22835

1-B. Name and Contact Information of Person to be Contacted on Matters Involving this Application:	
Prefix:	Dr.
First Name:	Tom
Middle Name:	M
Last Name:	Cardman
Suffix:	
Telephone Number:	540434142
Fax Number:	
Email:	tcardman@pagecounty.virginia.gov
Title:	Director of Economic Development

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1-C. Other Required Identification Numbers

i. Organizational DUNS:	831445494
ii. CCR # (CAGE):	5M7R4
iii. Funding Opportunity Number:	1
iv. Catalog of Federal Domestic Assistance Number:	**BTOP CFDA Number:** 11.557 **BIP CFDA Number:** 10.787 **BTOP CFDA Title:** Broadband Technology Opportunities Program **BIP CFDA Title:** Broadband Initiatives Program

1-D Eligible Entities

Please classify your organization. (Note: If there are multiple organizations involved in the project, designate the lead applicant that would enter into a Loan or Grant agreement with the Agency and assume operational and financial responsibility should an award be made). **Local, State, or Other Government Entity**

1-E. RUS Borrower Status

No

1-F. Applicant Federal Debt Delinquency Explanation

Is the Applicant Delinquent On Any Federal Debt? **No**
Federal debt delinquency Explanation:

2. Project Description & Project Title

2-A. Project Title: Page BBA Broadband Project

2-B. Project Description: The Page BBA mid-mile fiber project establishes a core technology base to serve a distressed population which has less than 40 % broadband penetration. The project provides accessible, non-discriminatory interconnection capabilities for internet service providers to offer last mile solutions. The network will connect town governments, first responders, schools, libraries and the primary hospital.

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3. Application ID for Multiple Submissions for Identified Service Areas:

4. Rural Area Determination

At least 75 percent of the proposed service area to be funded falls within rural areas that are unserved or underserved.

Yes

5. Applications for Rural Areas: Please choose the funding program(s) to which you are submitting this application.

a) BIP broadband infrastructure category to which you are applying:
BIP - Middle Mile Project

b) Would you like this Application for Rural Areas to also be considered for BTOP funding?
Yes

c) BTOP Infrastructure category for which you are applying.
Middle Mile

6. Applications for All Other Areas: Per the NOFA, all applications to fund broadband infrastructure projects in areas that are less than 75% rural must be submitted to NTIA for consideration under BTOP.

BTOP broadband infrastructure category to which you are applying:

B. Eligibility Factors

7. Application Submission

BIP and BTOP Factors Selected By Applicant:
Applicant has submitted a completed application and provided all supporting documentation required for the application.
The Project will be substantially complete within 2nd year from the award date, and the project will be fully

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complete by the end of the 3rd year from the award date.
For projects seeking more than $1 million funding, the Applicant agrees to submit a certification, from a Professional Engineer, that attests that a) the system will deliver the stated performance; and b) the projected project will be substantially completed within two years, and fully completed within three years.
The Applicant provides two-way data transmission with advertised speeds of at least 768 kbps downstream and 200 kbps upstream.
Applicant understands and agrees to comply with the nondiscrimination and interconnection obligations outlined in the NOFA.
If applying for a last mile Broadband Infrastructure project, applicant understands and agrees to comply with the last mile coverage obligations as outlined in the NOFA.

Additional Factors for BIP Selected By Applicant
At least 75 percent of the proposed funded service area qualifies as unserved and underserved rural areas in accordance with the NOFA.
Applicant understands and agrees that the project will be fully funded in accordance with the requirements of the NOFA.
Applicant understands and agrees that only projects that RUS determines to be financially feasible and/or economically sustainable will be eligible under this NOFA.

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Additional BTOP Factors Selected By Applicant • **Conformity with Statutory Purposes** • **Cost Sharing/Matching** • **Reasonableness of Project Budget**
The project advances at least one of the statutory purposes for BTOP
Applicant has provided documentation that the project would not have been implemented during the grant period without federal grant assistance.
Applicant has provided a budget that is appropriate to the proposed technical solution and only includes eligible costs.

- **Demonstration the Project Could not be Implemented But For Federal Grant Assistance**
  Applicant is providing matching funds of at least 20 percent towards the total eligible project costs?
  Yes

7-k. Cost Sharing/Matching Fund Explanation

C. Executive Summary

Executive Summary of Project for BIP and BTOP:

8. Infrastructure Projects Executive Summary
This grant application outlines a middle mile broadband project to build a $2.06 million fiber optic network through the heart of Page County, Virginia, to support health care, education, jobs, economic development and quality of life applications for a rural population of 24,000 people. Included in the project is a program to stimulate digital inclusion and broadband adoption. There is no existing middle mile solution available to the county, and the county itself qualifies as a rural area with both underserved and unserved populations. The fiber network will pass through four communities, beginning in Rileyville at the northern end of Page County. It will pass through the Town of Luray (central) and the Town of Stanley (south

central) and end in the Town of Shenandoah in the southern end of the county. There will be a total of 6,280 households, 745 businesses and 53 strategic institutions passed.

This project is the top economic development priority for the Shenandoah Valley Regional Commission, is endorsed by the Virginia Department of Housing and Community Development, and the US Senate Appropriations Committee through the US Department of Agriculture Distance Learning, Telemedicine and Broadband Program.

This middle mile project has wide community, government and business support. The County of Warren, Virginia has submitted a letter indicating their interest in a multi-jurisdictional partnership to address the unserved and underserved regions of southern Warren County. This application also contains a number of letters of support and intent to participate by major organizations that include the Shenandoah Telecommunications Company (ShenTel), which plans to use the network to enhance last mile projects county-wide using wired and wireless broadband; Lord Fairfax Community College; Page County Public Schools; Massanutten Regional Library System; Page County Fire and Emergency Medical Services; Northern Shenandoah Valley Regional Commission; the Shenandoah Valley Partnership; Page Memorial Hospital and its satellite health facilities and the Page County Sheriff's Office. Additional letters of endorsement have been received (see Supplemental Information 1) from the Governor of the Commonwealth of Virginia, The Honorable Timothy Kaine, Congressman Eric Cantor, the Commonwealth of Virginia Department of Housing and Community Development, and U.S. Senators Jim Webb (sent directly to BIP and BTOP granting agencies)and Mark Warner.

More directly in terms of jobs and economic development, the project has the support of Premier Technical Services (see letter attached, question 41), which will become the anchor tenant in a new technical park for the county with federal and commercial contracts for a data center, network operations, data warehousing and other advanced services. PTS will bring an estimated 100 new jobs to Page County and will establish the first step in the county's program of revitalization, economic growth and digital inclusion. The development of the PTS data Center has the support of the Federal government and the office of the Governor of Virginia.

The initiation of the middle mile project stems from the county's Strategic Economic Development Plan (2004 and 2008), which had wide citizen participation and led to the establishment of the Page County Broadband Authority (BBA). This six-person Authority was

set up by the Page County Board of Supervisors specifically to establish broadband policy. In addition, the BBA has created a well qualified management team. The management team is an experienced blend of technology professionals, business professionals, and economic development professionals. These individuals will be responsible for implementing the middle mile project and managing day-to-day operations. Both the Broadband Authority and the management team are in place, ready to implement the plan upon approval of the grant.

Historically, one of the county's major sources of employment was the manufacturing industry. However, several local plants closed, relocating facilities overseas. This shift reduced employment in the manufacturing sector by 50 percent over five years. The change not only affected employees that were laid off and their families, but the economic vitality of the entire region. This impact is reflected in the fact that 12.2% of the population currently lives below the poverty level and the unemployment rate is 11.7%, well above the Virginia average of 7%.

Sixty percent of residents commute to work outside the county daily each day because of a lack of jobs locally. Economic development efforts to recruit businesses and improve salaries are hampered by a lack of high speed infrastructure to support technology-dependent industries such as those currently located in high-traffic urban areas. These realities pose a significant challenge to the Page County government and Broadband Authority in terms of generating sufficient revenue to draw on for funding local initiatives. The low average income, high unemployment, population characteristics and small business base have made it ever more challenging to meet the 21st century demands for health, education and welfare services without the ability to leverage advanced broadband and communications services.

Initial planning for the project began in 2008, supported by a $120,000 grant from the Virginia Department of Housing and Community Development. A three-phase analysis by engineering firm Icon Technologies surveyed broadband price elasticity throughout the entire geographic area that the project will cover. 2500 residential and 500 business surveys were distributed with a return rate of 32% (797) residential and 17% (86) business, exceeding the statistically valid sample size of 10% return rate. The survey data was then used to craft a pricing strategy for residential, business and anchor institutions that is affordable in comparison to existing services.

The Icon studies also enabled the county to establish parameters for the project, conduct a

needs assessment, and develop a preliminary engineering and implementation plan for the project. However, the relatively low level of resources available to the County makes it virtually impossible to implement the project without federal grant assistance.

The project will bring a 144-strand fiber-optic network through the County from Rileyville in the north to Shenandoah in the south, passing within 500 feet of every county and town facility, every school, every library and every health care facility. It will provide capacity for backhaul to expand the network of cell towers county-wide in order to support the implementation of 4G broadband via cellular. And it will provide fiber loops every thousand feet of the network to afford adequate access for third party Internet Service Providers, who will be offered attractive terms and support from the County to build out last-mile services to every household and business.

A contract will be let under the procurement guidelines of the State of Virginia for a third party to provide network operations and support, including a redundant-power, secure Network Operations Center for the fiber network.

Access for service providers will be offered on an open and non-discriminatory basis, and will be guided by contractual requirements in support of the principles of connectivity established by the Federal Communications Commission, the tenets of consumer privacy and information protection, and reasonable network management practices. Access to the network will be open to both incumbent providers seeking to expand their services and to new entrants to the county. Last mile solution providers will be required to adhere not only to the FCC interconnection principles, but to the following:

- The NTIA/RUS "fifth principle," which requires that neither the Page County Broadband Authority nor the leasing parties on the network favor any lawful Internet application or content over others;
- Notice of network management policies, which requires that the Page County Broadband Authority and its leasing parties on the network display network management policies prominently on their Web site, and notify customers of changes;
- Leasing parties on the network may still engage in reasonable network management practices as defined by the Federal Communications Commission;
- Customer privacy and personal property rights to be determined in accordance with federal and Virginia laws and transparently presented to consumers in a Terms of Service

Agreement;

The Page County Broadband Authority, while prohibited by state law from entering into agreements until the project is funded, is engaged in discussions with a diverse set of potential last mile partners on cellular, cable, DSL and wireless platforms.

Independent service tiers have been preliminarily developed, offering services for a 100Mbit private network for institutional tenants; three levels of business services; and a base level of residential service that may be amended and expanded by Internet Service Providers once these are in place.

This application is made as a joint submission to both the BIP and BTOP programs. However, financial analysis based on a five-year projection indicates that attempting to finance the project via loans would place the county and the project under severe financial distress and would ultimately lead the project to be less than nominally sustainable. Application is therefore made for a grant of $1,648,940.80 against a total budget of $2,061,176.00 for construction of the 38-mile network and its affiliated operations.

This project meets both the intent and spirit of the American Recovery and Revitalization Act to apply federal assistance to rural, economically depressed regions whose citizens will benefit from new and innovative approaches to job creation, health care, education and stimulation of broadband.

Description of BTOP Project Purpose (BTOP Applicants Only Next Three Questions)

9. BTOP Statutory Purpose:

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Provide access to broadband service to consumers residing in "unserved" areas of the United States.
Provide improved access to broadband service to consumers residing in "underserved" areas of the United States.
Provide broadband education, awareness, training, access, equipment, and support to schools, libraries, medical and healthcare providers, community colleges and other institutions of higher education, and other community support organizations by or through these organizations.
Provide broadband education, awareness, training, access, equipment, and support to organizations and agencies that provide outreach, access, equipment and support services to facilitate greater use of broadband service by low-income, unemployed, aged, and otherwise vulnerable populations.
Provide broadband education, awareness, training, access, equipment, and support to job-creating strategic facilities located within a defined economic zone, or community as designated by a State authority, Department of Commerce , HUD or USDA.
Improve access to, and use of, broadband service by public safety agencies.
Stimulate the demand for broadband, economic growth, and job creation.

10. Description of BTOP Project Purpose:

The Page County fiber project is designed to provide improved access to broadband services for a rural, mountain valley county of north central Virginia that currently has census blocks qualifying both as underserved and unserved. The county currently has no accessible middle mile solution, and even the existing private networks have limited capacity.

The middle mile solution will also establish a fiber backbone capable of supporting multiple Internet service providers in providing last-mile connectivity to consumers county-wide.

The project has four immediate goals:

- Support for new strategic businesses, including a planned data center operated by Premier Technical Center. The county development program will use the availability of

interconnections with the middle mile to attract a new generation of non-agricultural, job-producing businesses based on a service and information-based economy. The middle mile fiber system would support the acquisition of new business customers for the county's technical park, creating an estimated 100 new jobs per year during the initial planning horizon of five years, in addition to the direct jobs created for network management.

- Support for ehealth and elearning initiatives in cooperation with Page County Memorial Hospital and the Page County School District. The ability to make use of high-speed connections between health facilities will better link this rural health system with the University of Virginia medial hospitals. The network will connect school facilities, and establish a base for distance-learning services for both adults and children. Ultimately, the project will make possible advanced applications and technologies that include remote patient monitoring, high-resolution scanning and x-ray services, and the utilization of full streaming video for education purposes.

- Support for public safety, anchor and first responder organizations. The network will link the 53 major institutions county-wide, including police, fire, EMS, sheriff, town governments, county government, two libraries, six utilities, nine primary and secondary schools, and one community college. These capabilities will enhance communication, provide an emergency communication capability, and enhance both the reliability and security of these communications.

- Reaching vulnerable populations. Page county currently has a rural, economically disadvantaged and largely senior population, fewer than 40 percent of whom have broadband service. Outside of its three small towns, options for broadband are slow, expensive, and unreliable. The fiber project will establish backhaul and interconnection services for independent Internet Service Providers to reach these populations. Included is a program for outreach and sustained adoption of broadband through two levels of training programs – first for public, medical and educational leaders to establish a knowledge foundation for advanced services, and second for consumers to provide computer training, Internet training, and access to low-cost computers via community centers and libraries. Page County is currently working with Net Literacy and other community-based education organizations to develop the curriculum for this outreach program.

The project will partner with a number of organizations, large and small. The Virginia Library Association, working in conjunction with the Gates Foundation, will seek to make the most effective use of the middle mile solution to provide education and access to consumers. Small businesses and minority or veteran-owned organizations will be contracted for major parts of the implementation and management of the system. Other partners will include James Madison University and other communications vendors, large and small, who have forwarded with this application their letters of endorsement.

11. **BTOP Enhanced Services for Health Care Delivery, Education, and Children:**
The Page County middle mile fiber network has specific and tangible capabilities in delivery of enhances services for health care, education and support of children.

In health care, the project will link the Page County Memorial hospital with two satellite health facilities, extending the continuum of patient care beyond a single hospital and making possible remote access to clinical service for patients. This will, in turn, help to improve cost-effective access to health care for an increasingly isolated, elderly and under-insured population.

Broadband access will help level the playing field between urban and rural medical capabilities, offering real-time access to training, medical databases, expert consultation and life-saving technologies utilizing such bandwidth-rich applications as telesurgery, detailed medical imagery and diagnostics.

In education a single 100 Mbit fiber connection would provide 60 times the bandwidth delivered to the average primary or secondary school via existing DSL and cable broadband solutions, where those are available. The Page County middle mile solution would provide the ability to access more information and deliver it with greater reliability, including the use of ebooks in place of standard (and less viable) paper texts; full-streaming video; video conferencing with students the world over; student management; and distance learning.

It is particularly critical in that it would reduce the reliance of the schools on the need for continuous hardware upgrades and a dependence on federal programs such as eRate to subsidize those upgrades. Further, it provides more secure communications, immune to interference from atmospheric and other conditions.

Beyond the secondary level, the project will enable distance learning programs for adults,

particularly those who are not mobile, and expanded research and education programs at the post-secondary (college and above) levels. It would expand the educations choices of students throughout the county, enabling them to continue their studies without abandoning family businesses and elderly family members.

But the single greatest benefits of the project accrue to children. Parents of children with special health care and educational needs often must lose valuable work time and wages to reach the facilities their children need. By allowing families the opportunity to be served at local clinics through telemedicine applications that enable remote screening, diagnosis, treatment, and monitoring, families can receive quality care in the communities in which they work and live. Though e-health applications have different bandwidth requirements, applications such as video conferencing, digital x-ray transmission, and remote monitoring require fast broadband connections.

In addition children who are temporarily or permanently displaced from the classroom through illness or injury will be able to rejoin their mainstream classrooms via videoconferencing, maintaining the recommended curricula to advance with their peers.

A critical part of the project will be the implementation of programs for broadband adoption among medical, education and child welfare workers within the county. As the project is implemented, this will give the professionals a head start in seeking out advanced broadband applications and partnerships.

D. Proposed Funded Service Area

12. Proposed Funded Service Area Maps:

12-A. Service Area Map (Reference Number): **3571-F102-4E9A-89E8**

12-B. Is the applicant is seeking a waiver for providing less than 100% coverage of a census block. **No**

13. Proposed Funded Service Area (BIP - Last Mile Projects):

Please refer to section M at the end of document.

14. Proposed Funded Service Area (BTOP - Middle Mile Project):

Please refer to section M at the end of document.

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15. Non-Funded Service Area(BIP Only):

Not applicable.

16. Coverage Waiver:

Applicant is seeking a waiver for providing less than 100% coverage of a census block.

No

For Response of "Yes" please refer to upload section for additional supporting documentation.

17. Methodology for Area Status:

In 2008, Icon Broadband Technologies, a division of Icon Engineering, Inc. and Consulting Gateway Corporation conducted a county-wide internet-access survey and determined that Page County is underserved in broadband access. A two-page questionnaire was compiled and mailed in order to generate a statistically accurate sampling of residential and business addresses. Public school officials and higher education personnel were surveyed via telephone.

A response rate of 10% would have returned a statistically valid sample size at a 95% confidence level. We received a 32% response from the residential surveys and a 17% response from the business surveys. By receiving a higher return on the surveys, we now have a higher confidence level in our sample size. With the assistance from the school district officials, we ensured that families with children were well represented in the survey process.

The consultants completed the analysis of the responses and have confirmed that there is less than a 40% penetration rate of broadband in the project area. In the designated project area the Town of Luray has the most access to DSL and cable modem. The other two towns of Stanley and Shenandoah have small pockets of availability. Throughout the rest of the county there is no access to broadband.

18. Middle Mile Benefits

The last mile service areas to be directly supported by the Page County fiber network would include prospective fiber customers within 500 feet of the network itself. In addition, the last mile service areas would include 3G cellular providers Sprint, AT&T, CenturyLink and Shentel, within a three-mile radius of their respective cellular towers.

It is not possible to name the specific service provider, as Virginia state law prohibits the entry

into contracts with providers before funds are available for the project. However, based on the demographics of these populations, and on a projected uptake rate consistent with the national average of 66 percent, the population immediately to be served by a last mile provider would be 267 unserved households with 506 persons; and 3,927 underserved households with 9004 persons.

Critical Community facilities and community anchor institutions, which have committed to support the project, include:

- The administrative offices and 10 primary and secondary schools of the Page County Public School system, which will serve 3,767 students in 2009-2010 as well as the parents, staff members and educators employed by the system (PCPS data).
- Page County Memorial Hospital and its satellite clinics in Stanley and Shenandoah, as well as the PMH Care and Home Medical Service, PMH clinic, PMH Therapy and Fitness Center, the Page County Senior Center, the Montvue Nursing Home and the Hawksbill Assisted Living facility. These will serve the full population of more than 24,000 in Page County with advanced eHealth and telemedicine services available only over a fiber network.
- The Luray, Shenandoah and Stanley Public Libraries, serving the full population of Page County with broadband access and information services.
- The Page County Chamber of Commerce, serving more than 500 businesses with information and services.
- The Page County Job Center, serving the full population of the county with job assistance.
- The Page County government offices, including main offices and Court House; the Health Department facility; the County Technical Park; a Senior/Community Center; Animal Shelter; Social Services Office in Stanley; the Battlecreek Landfill; and the Luray, Stanley and Shenandoah Compactor recycling centers. These serve the full population of Page County with jobs, social services, legal, eGovernment and activities information.
- The offices of the Town of Luray, including the business office; police department; fire department; public works department; rescue squad; sewage treatment plan; water treatment plant; and two recreation park offices. These serve a municipal population of 4,871 persons in 2,191 households with emergency service, first-responder, public safety, water, sewage, recreation and eGovernment services.
- The offices of the Town of Stanley, including the business office; police department;

two fire departments; public works department; rescue squad; sewage treatment plan; water treatment plant; and a recreation department. These serve a municipal population of 1,326 persons in 598 households.

- The offices of the Town of Shenandoah, including the business office; police department; fire department; public works department; rescue squad; Community Computing Center; and the water treatment plant. These serve a municipal population of 1,878 persons in 764 households.

These offices are currently able to offer limited services to the population of Page County, due to the limited availability of broadband, the limited adoption of broadband, and the bandwidth required to support advanced applications. It is not simply a matter of bringing a base level of 768 Kbit download and 200 Kbit upload speeds. The capacity demands required for eLearning, eHealth and eGovernment applications will need more than the combined capacities of all of the current broadband vendors, and will need the support of a multi-strand, high-capacity fiber backbone.

E. Proposed Service Offering

19. Broadband Service Offerings for Last Mile Project:

Please refer to upload section at the end of the document.

20. Service Offerings for Middle Mile Project:

Please refer to upload section at the end of the document.

Competing Service Providers

21. Existing Broadband Service Providers and Services Offered:

Please refer to upload section at the end of the document.

Non-Discrimination, Interconnection

22. Description of Network Openness:

The Page County Fiber Network Project was designed to be a non-discriminatory, open

network with interconnection policies consistent with the tenets of network neutrality and transparent network management practices.

The core tenets guiding this philosophy are the policy principles adopted by the Federal Communications Commission on August 5, 2005, four principles to encourage broadband deployment and preserve and promote the open and interconnected nature of public Internet: (1) consumers are entitled to access the lawful Internet content of their choice; (2) consumers are entitled to run applications and services of their choice, subject to the needs of law enforcement; (3) consumers are entitled to connect their choice of legal devices that do not harm the network; and (4) consumers are entitled to competition among network providers, application and service providers, and content providers.

The Page County Broadband Authority will accept partnership bids from any public or private entity consistent with this philosophy on a non-discriminatory basis. Those bids will be segregated into (1) private networks; (2) last mile solution providers.

Private networks leasing space on the middle mile solution will be required to meet standards which demonstrate how the network operates in the public interest, as in the case of emergency first-responders and municipal/county governments. Such networks will be considered to fall under the NTIA/RUS definition of "managed networks."

Last mile solution providers will be required to adhere not only to the FCC principles, but to the following:

- The NTIA/RUS "fifth principle," which requires that neither the Page County Broadband Authority nor the leasing parties on the network favor any lawful Internet application or content over others. This will permit additional services – specifically Voice-over-IP and video services – to co-exist in a vibrant competitive environment with broadband applications and services.

- Notice of network management policies, which requires that the Page County Broadband Authority and its leasing parties on the network display network management policies prominently on their Web site, and notify customers of changes.

- Physical interconnection for exchange of traffic. The Page County Broadband Authority will offer interconnection where technically feasible and without exceeding current or reasonably anticipated capacity limitations on reasonable rates and terms to be negotiated with requesting parties. This obligation includes both the ability to connect to the public Internet and physical interconnection for the exchange of traffic.

- Leasing parties on the network may still engage in reasonable network management practices as defined by the Federal Communications Commission, accommodate law enforcement agencies, employ caching and "application-neutral bandwidth allocation," and take measures to address spam, denial of service attacks, illegal content, and other activities detrimental to the operation of the network and the public good. They may also provide selected managed services, including telemedicine, public safety and distance learning.

- Customer privacy and personal property rights, to be determined in accordance with federal and Virginia laws and transparently presented to consumers in a Terms of Service Agreement.

- Intellectual Property laws, as determined by federal and Virginia laws.

These requirements will be made conditional to and a part of any agreements for interconnection or utilization of capacity on the network.

Non-Discrimination and Interconnection (BTOP applicants only for next three questions)

23. Non-Discrimination Obligations (applicable to Last Mile and Middle Mile Applicants):

Adhere to the minimum non-discrimination requirements as set forth in the NOFA.
Display the nondiscrimination practices in a prominent location on the service provider's web page, and provide notice to customers of changes to these policies.

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24. Interconnection Obligations (applicable to Last Mile Applicants):

25. Interconnection Obligations Middle Mile Applicants:

Adhere to the minimum interconnection requirements as set forth in the NOFA.
Display the interconnection policies in a prominent location on the service provider's web page, and provide notice to customers of changes to these policies.
Commit to offering wholesale access to network components and services such as wavelength or fibers at reasonable rates and terms.
Commit to binding private arbitration of disputes concerning interconnection obligations.

Cost Effectiveness and Affordability

26. Cost per Household (BTOP only):

Middle mile project, therefore this question is not applicable.

27. Affordability

A recent, lengthy study was completed in 2008 by Icon Broadband Technologies, a division of Icon Engineering, Inc. on behalf of the Page County Broadband Authority, which surveyed service pricing tolerance in the entire geographic area that the project is going to cover. 2500 residential and 500 business surveys were distributed with a return rate of 32% (797) residential and 17% (86) business, exceeding the statistically valid sample size of 10% return rate. The pricing strategy in the 5 year financial pro formas uses an approach recommended in the Icon study for servicing residential, business and anchor institutions. The

Figure 4: Internet Connections and Survey Responses

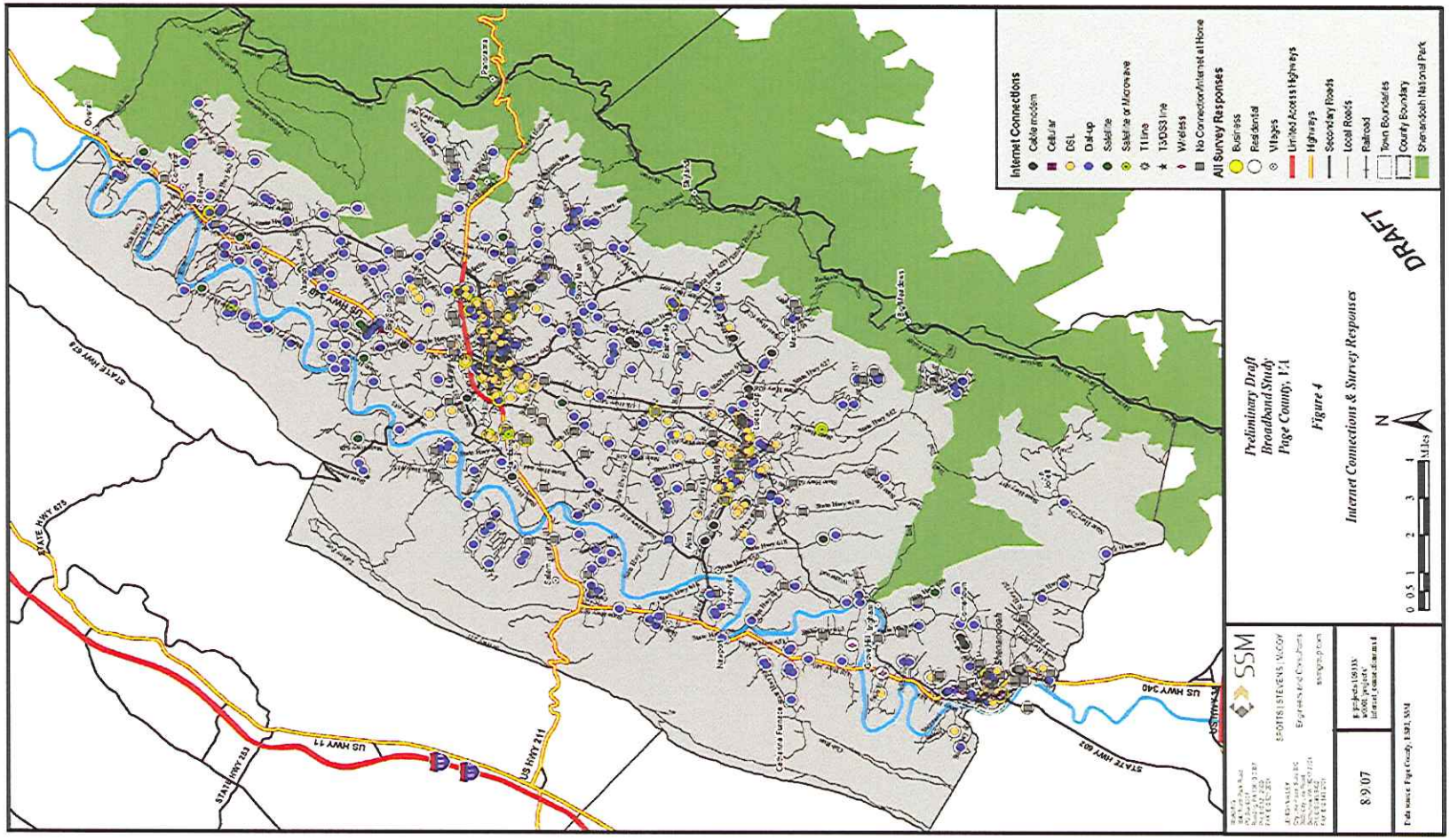


Figure 5: Internet Use and Satisfaction

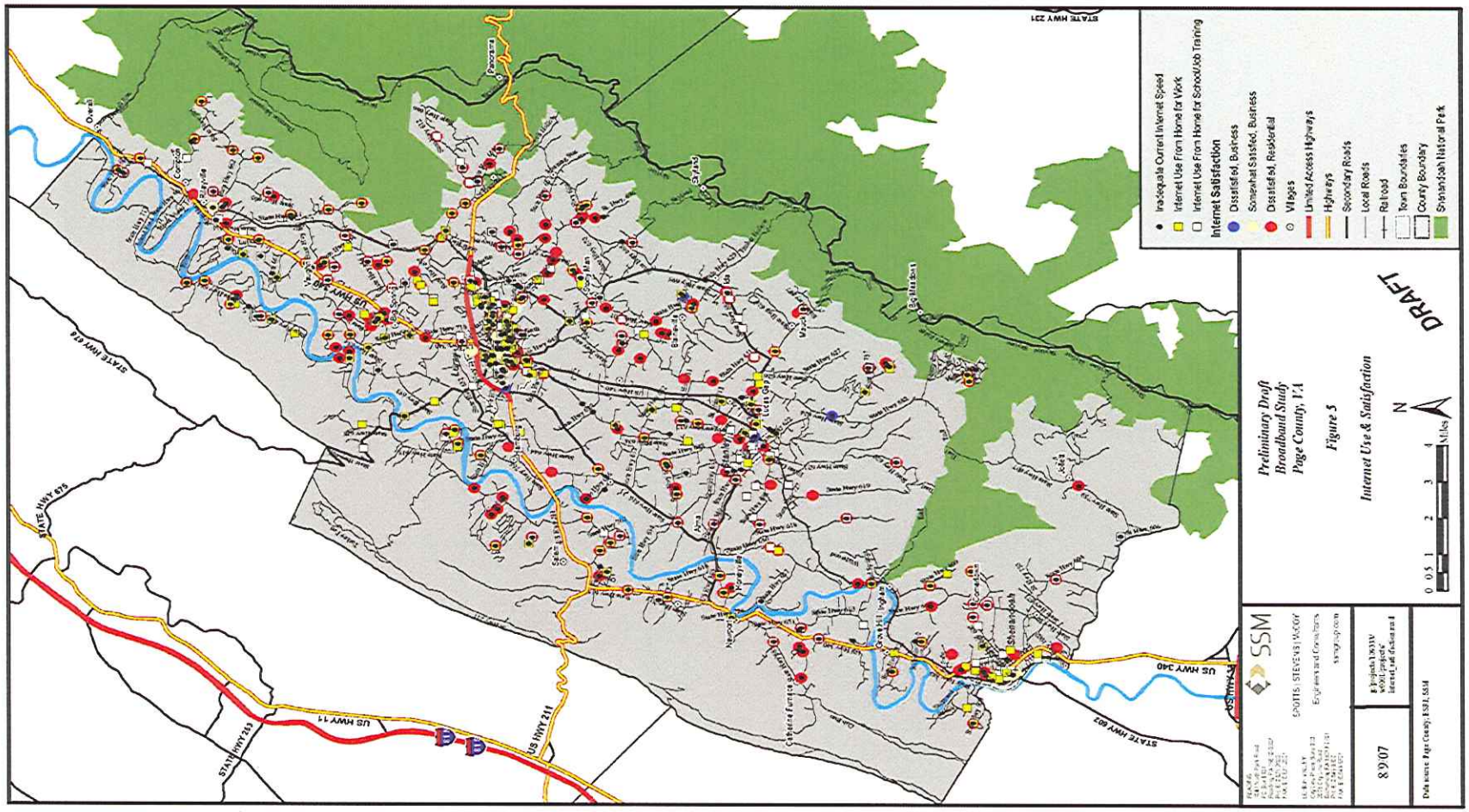
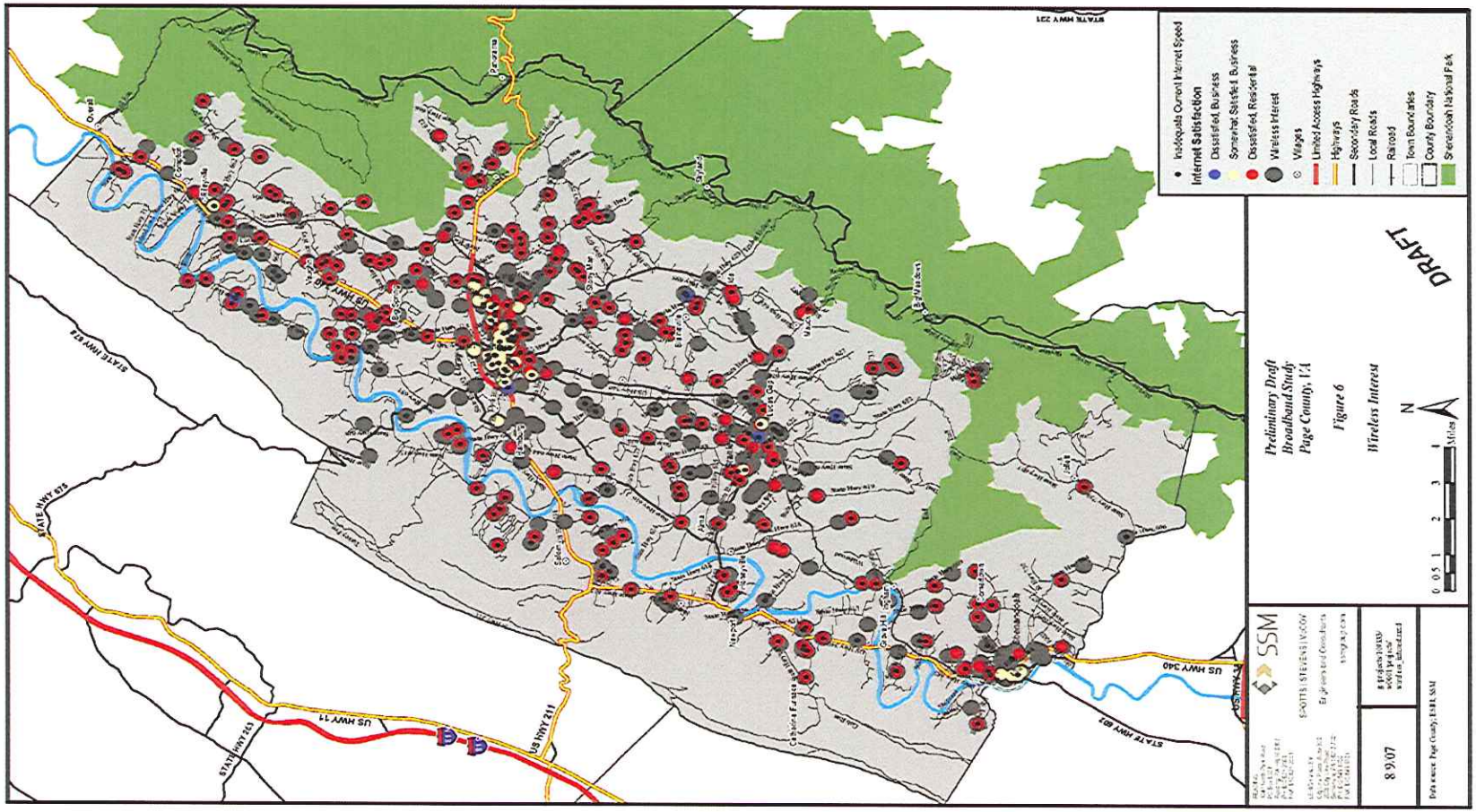
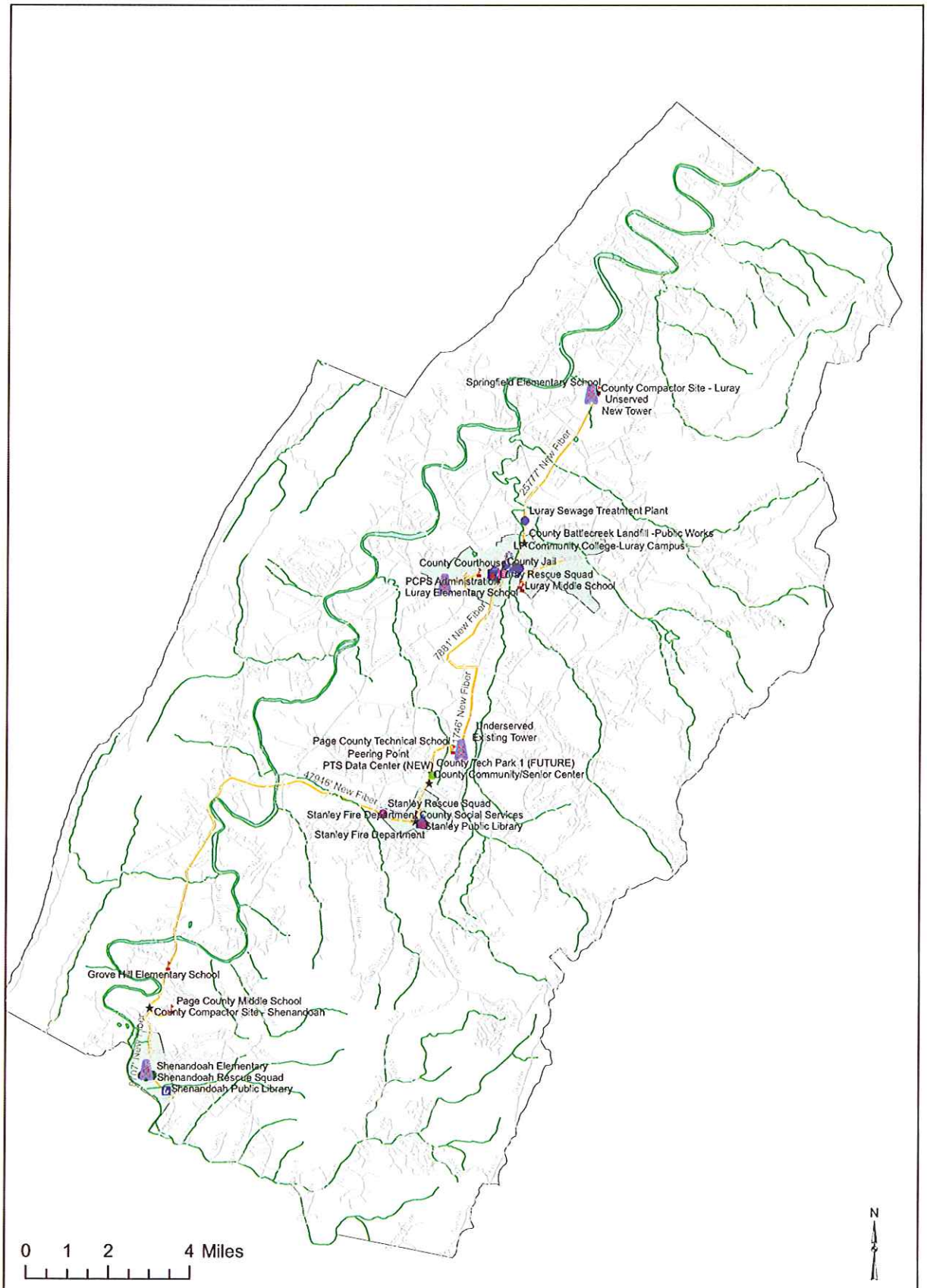


Figure 6: Wireless Interest





Towers
CentralOffice
LocalExchangeCarriers
PeeringPoint
FiberNetwork

AnchorTenants
County
Healthcare
Higher Ed
Library
Luray Town
Public School
Shenandoah Town
Stanley Town

ARRA Requested Information
Page County, Virginia

Page County Distribution Fiber

Prepared by:

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Woodstock, Georgia 30189

PageCountyARRA_20091217.mxd

Environmental Questionnaire-Response Document

Page County Broadband Authority

Easy Grant ID 1410

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This document provides response to the Environmental Questionnaire (EQ) as required for Broadband Infrastructure projects that involve construction of facilities.

Page County

i. Project Description

Every effort has been made to answer all of the questions relating to the EQ for Page County, Virginia within the requested seven day turn around period. Without funding in place a detailed deployment design cannot be undertaken and therefore only the conceptual design may be used for assessment at this point. Even should some structures be required to move a mile or so one way or the other when walk out and detailed design is completed, it remains unlikely the environmental impact will be different from what is listed here. Because make ready engineering[1] and detailed deployment design are not begun nor completed, Page County has the opportunity to relocate or design around any significant environmental roadblocks that may be encountered. Deployment design will be structured to assure the project meets deployment timelines for permitting, construction and project completion. The SHPO position on planning and mitigating the impacts of linear projects guidance document point number six (6) will be employed during the design phase of this project.

The Page County infrastructure is a middle mile deployment where at least 75% of the proposed service area to be funded falls within rural areas that are unserved or underserved. The project consists of installation of a fiber optic backbone from Rileyville to Shenandoah within Page County and will enable the provision of affordable broadband communications serving the middle mile tenants; provides for the provision of last mile services; encourages competition and economic development; grows existing business; attracts new business; enables home based businesses, telework and telemedicine. Fifty-four (54) Community Facilities will have a direct fiber connection to the middle mile network. This project will construct one (1) tower on previously disturbed ground at an elementary school and utilize three (3) existing towers within Luray, Stanley and Shenandoah. The four (4) towers will be connected to the middle mile network to provide high speed data backhaul for last mile wireless.

[1] Make Ready Engineering is the process of examining and recording the fiber route by walking the planned deployment and to assure the most efficient fiber or structure design with the least environmental impact. Existing pole lines are also measured and each attachment recorded to gauge the expense and estimated time to respond for any pole changes to accommodate new attachments.

The projected end users for this project consist of governmental agencies within Page County serving the general public at their home and work, educational facilities, public safety, one hospital and the health delivery community, and a planned data center.

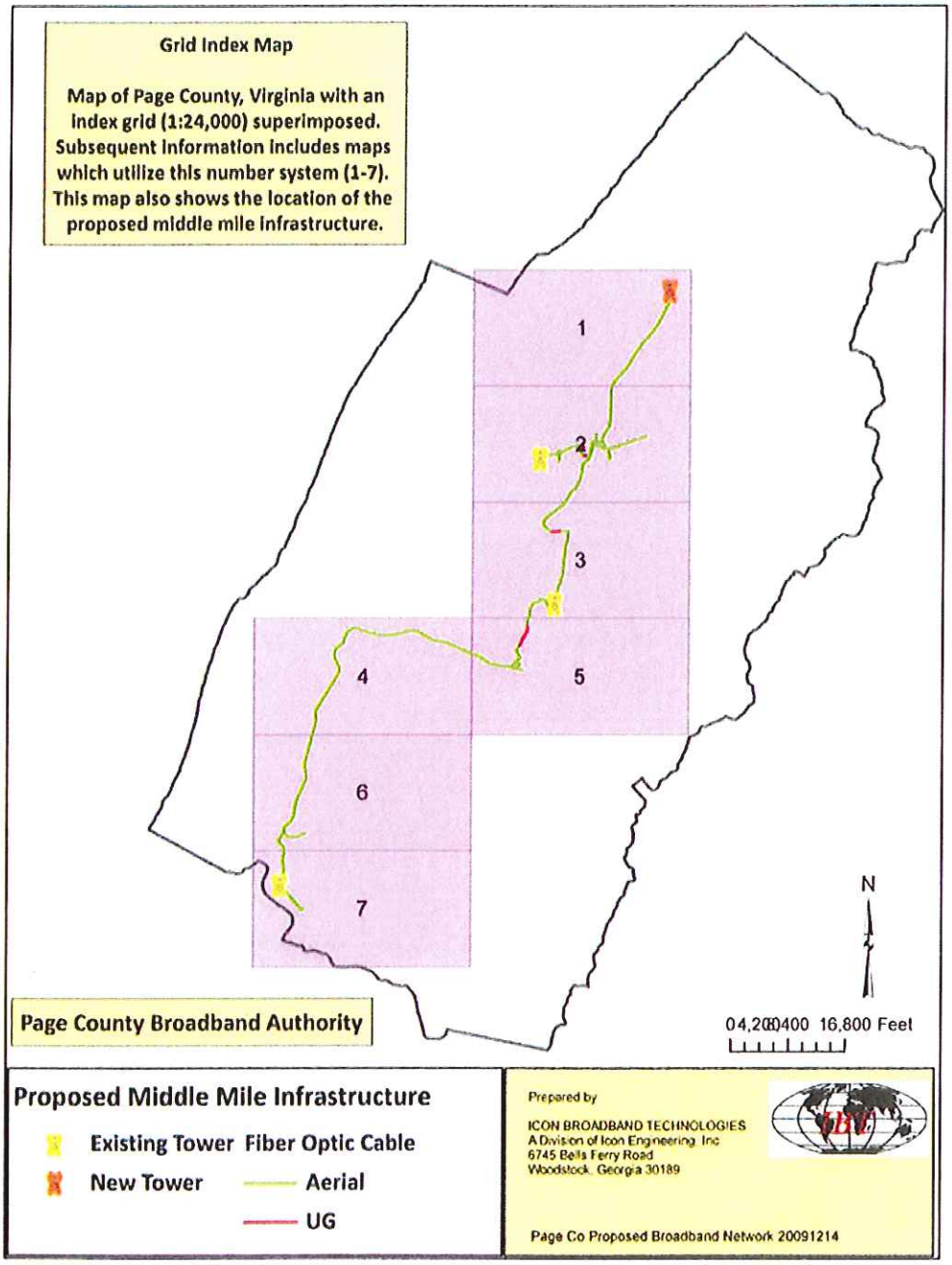
Page County has been sectioned into a grid system for producing 1:24,000 scaled mapping in this environmental questionnaire. Individual maps have been created for the new tower site and areas of construction. Where no ground disturbance is anticipated a Buffer Zone environmental database report that covers portions of the county has been provided. All information contained in the individual construction site maps is included in the buffer zone supporting documentation.

The grid map that follows on the next page shows Page County in white with a numbered grid designation overlay. Each map included in this document will relate to one area of this grid map, e.g. map page number 1 will be the same as the grid location square 1 on the grid map and is cross referenced in the document to this square number.

There are a total of four (4) tower sites included in the overall Page County network. Only one (1) of the towers will be constructed under this stimulus application; the other three (3) towers are existing towers that will be connected to the middle mile fiber network to supply high speed data backhaul. The towers are numbered sites 0 through 3 with zero beginning at the north end of the county at the elementary school in Rileyville. The buffer map addresses the fiber construction primarily. Each major heading of the questionnaire will discuss each area of new construction individually under the heading. The maps begin with the project overview map, and the grid map is followed by the buffer map. Individual site maps are grouped together beginning on page 7 and are included within this text as smaller resolution pictures for reference only. The high resolution map files are separate individual PDF documents.

Page County Grid Map – New Construction

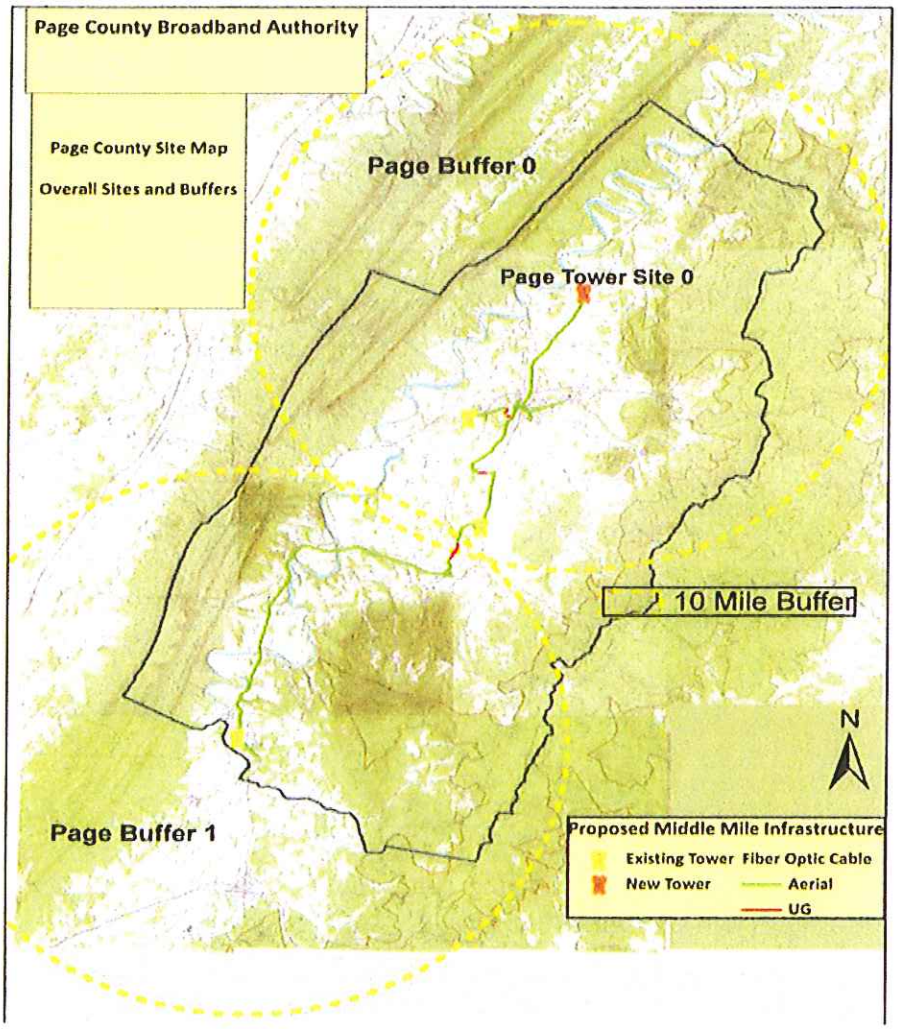
The grid map is a reference map for the individual sites of new construction throughout Page County. Each site map will relate to a purple square on this map and are referenced back to this page. This map shows the projected path of the fiber optic cable as a black or red line and all four (4) tower sites included in the project.



The file name for this map is PageCo 1410 Grid Index Map.pdf

Overall Sites and Buffers Map

Because fiber cable construction is planned on existing pole lines or in a few small areas within existing Virginia Department of Transportation (VDOT) Right of Way (ROW), this overall map was produced to evaluate the entire route by dividing the County into two buffer zones of ten miles including the fiber route. The majority of the fiber will be deployed on utility poles that already exist. Where underground construction is required the existing road ROW will be utilized in previously disturbed ground. The route was planned to minimize ground disturbance.



This map file name is PageCo 1410 Overall Site Map Buffers.pdf

Fiber Construction

Where underground deployment is required, fiber optic cable will be installed within the VDOT and local government ROW. All aerial fiber will be placed on existing utility pole lines unless otherwise noted and in Page County virtually all fiber is to be deployed aerially on existing poles. There are small areas of underground fiber construction in Luray by the hospital and to the County Government Center, and at two railroad crossings near Stanley. Trench, directional bore or missile bore shall be thirty (30) inches in depth with a total disturbed area an anticipated maximum of three (3) feet in width. The planned deployment aerially and underground will be on previously disturbed ROW.

Tower Construction

Tower construction in Page County will consist of one (1) self supporting tower (no guys) at an approximate height of 199 feet. The tower will rest on a 20 foot square piered concrete slab surrounded by a 60 foot square fenced area.

Such towers should be unlighted unless Federal Aviation Administration regulations permit lights[2]. Only white light will be utilized if lit and security lighting will be down-shielded. Migratory bird regulations will be followed as described in the US Department of the Interior, Fish and Wildlife Services, Ecological Services paper dated August 20, 2008 RE Communication Tower Projects in Virginia.

Buildings

At the tower sites it is possible a small co-location of equipment might be required in the form of a pedestal or not larger than a 10' by 10' co-location cabinet that would be positioned on the 20 foot square concrete slab already constructed to hold the self supporting tower.

ii. Project Maps

The following maps detail the footprints of proposed construction and the surrounding areas that would be disturbed. Critical habitats, wetlands, protected lands and wildlife refuges if occurring in the proposed construction site are clearly identified on the maps.

[2] US Department of Interior Fish and Wildlife Service-Guidance On The Siting, Construction Operation And Decommissioning Of Communications Towers and Migratory Bird Recommendations 8.20.08.

The remainder of towers to be utilized in the middle mile infrastructure project are existing. At the tower sites it is possible a small collocation of equipment might be required in the form of a pedestal or not larger than a 10' by 10' collocation cabinet that would be positioned on the concrete slab already constructed to hold the self supporting tower. Aerial photos of these three (3) existing towers are as follows:

Aerial Snapshot – Existing Tower Site 1, West Luray

iii. Property Changes

Tower Construction

The tower site preliminarily chosen in Rileyville is zoned Agricultural. The site is on previously disturbed and cleared land. For all towers a smaller dimension drop fiber will be trenched to the tower base along an access drive currently exists. This site is not proposed on federally owned or managed land.

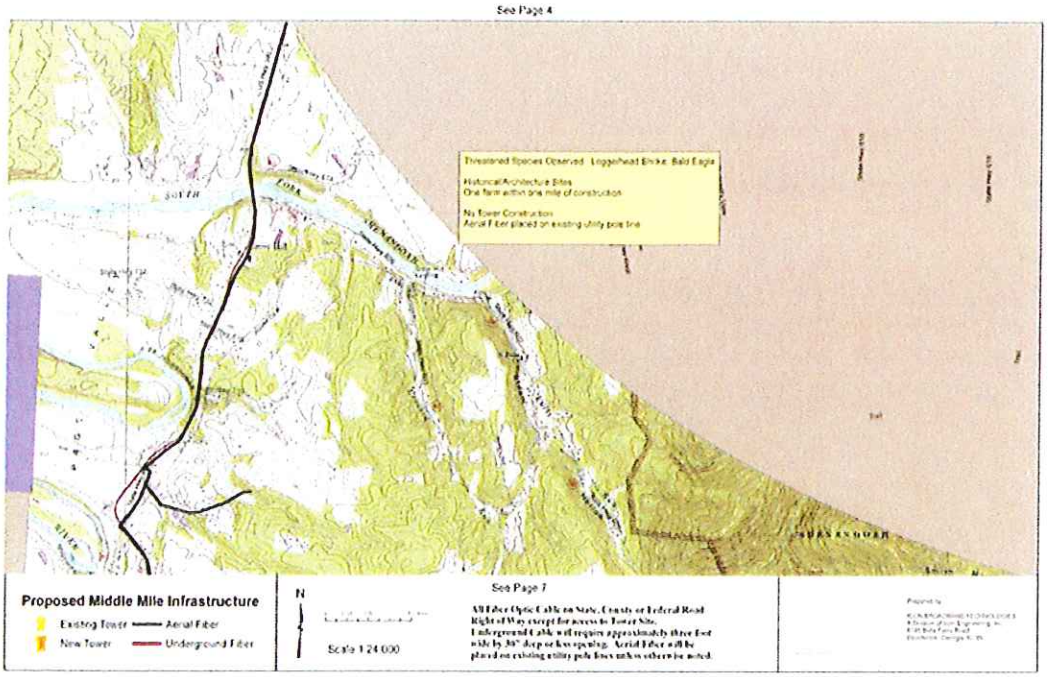
The tower should be unlighted unless Federal Aviation Administration regulations permit lighting. Only white light will be utilized if lit and security lighting will be down-shielded. Migratory bird regulations will be followed as described in the US Department of the Interior, Fish and Wildlife Services, Ecological Services paper dated August 20, 2008 RE Communication Tower Projects in Virginia.

The total footprint of the proposed new tower site will be 60 feet square and includes the following facilities:

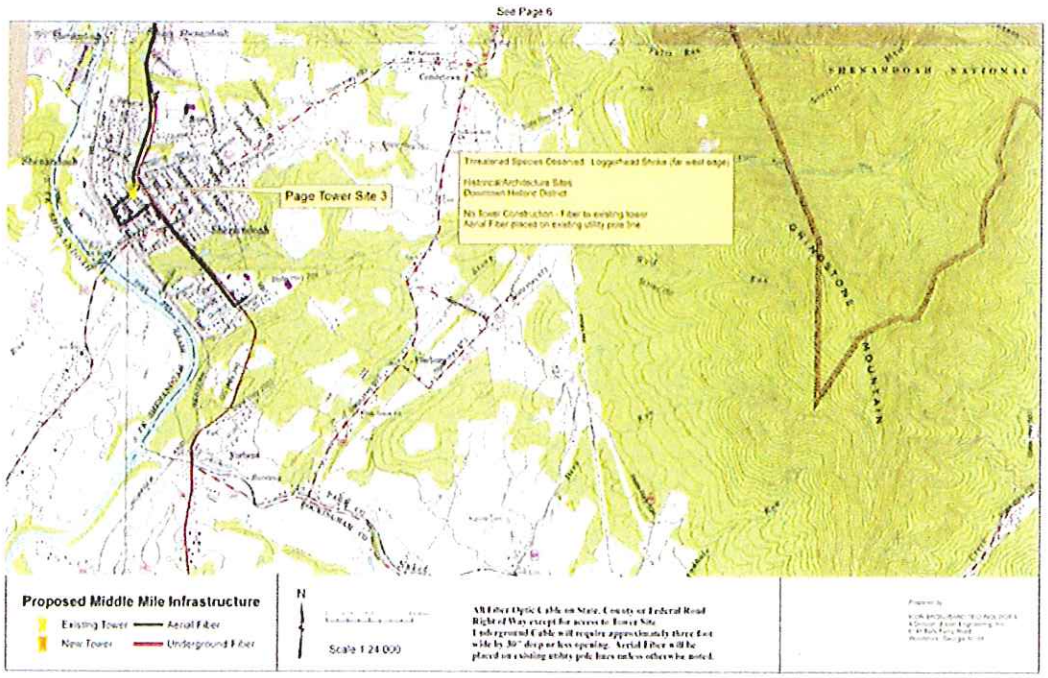
- 199' self supporting tower (no guy wires)
- 20 x 20 concrete pad for tower
- Chain link fencing around the perimeter of an area approximately 60 feet square

Aerial Snapshot – Rileyville, Proposed New Tower Site 0

The following map is file name PageCo 1410 All Aerial Map Page 6.pdf.



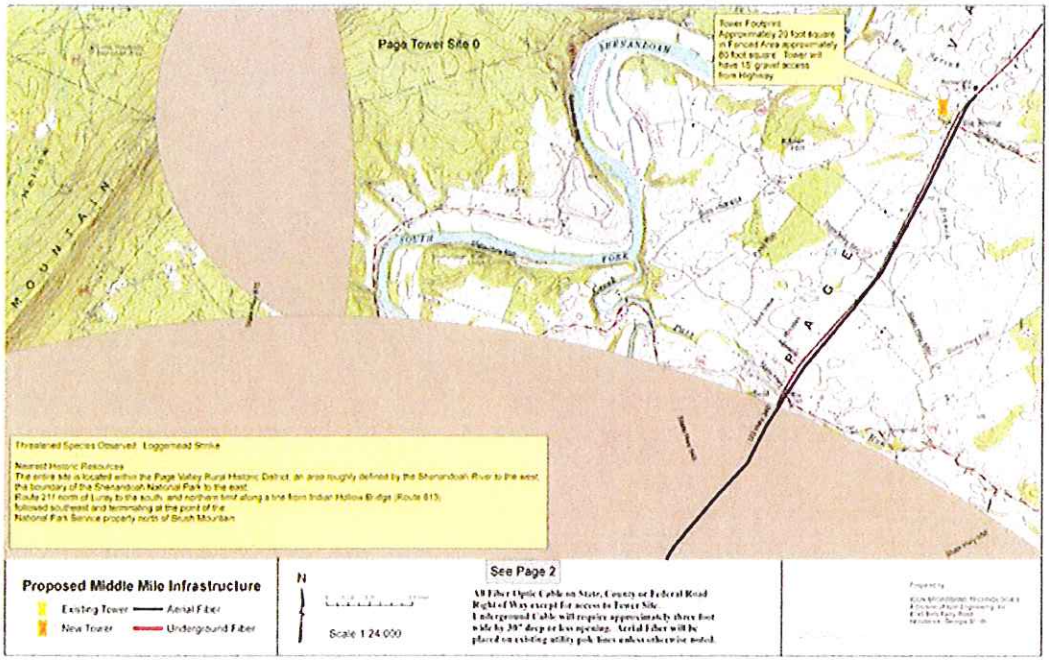
The following map is file name PageCo 1410 Tower Site 3 Map Page 7.pdf.



The following map represents the one (1) tower to be constructed in Page County. Above each map is the file name associated with the separate PDF document, followed by the map, followed by the associated Site Database Records Report name which details the environmental impact.

This is the northern most tower located at Springfield Elementary School in Rileyville.

The following map is file name PageCo 1410 Tower Site 0 Map Page 1.pdf.

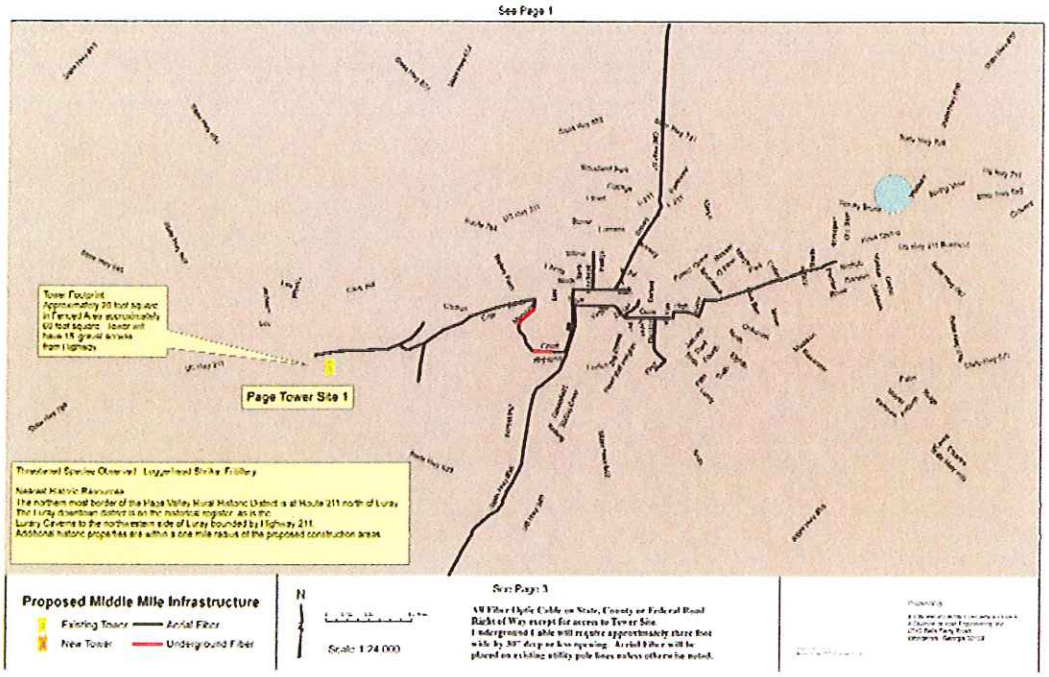


The above map #1 corresponds with index square 1 of the grid map located on page 4 of this document.

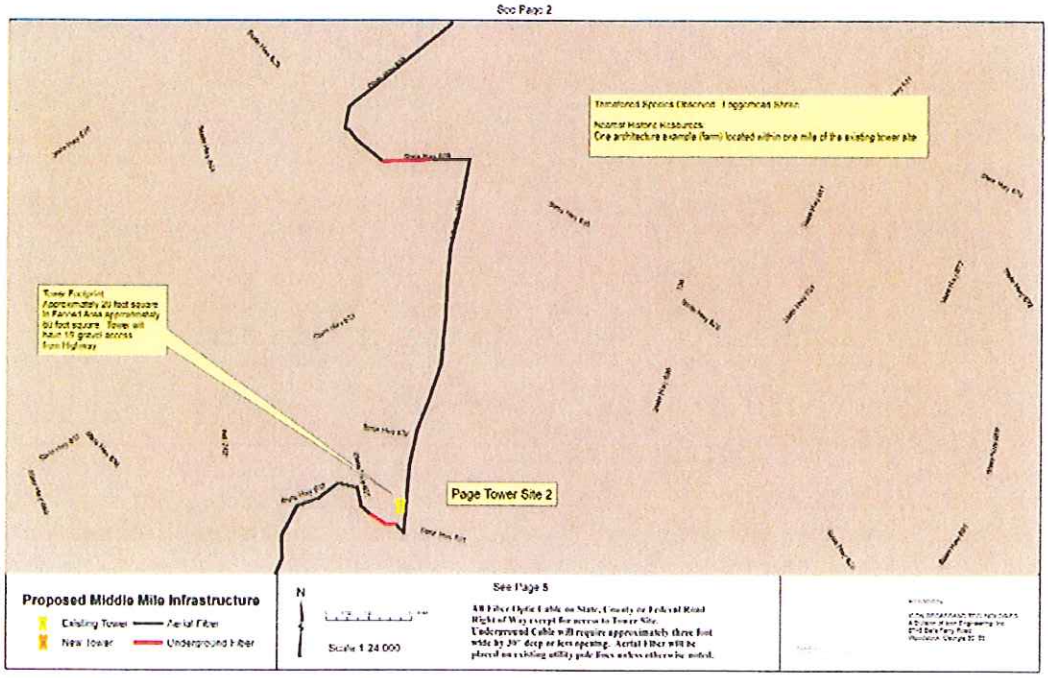
Additional information on the environmental impact for the Rileyville tower site 0 is contained in the file **PageCo 1410 Tower Site 0 Database Report.pdf**. This report includes all historic and archeological sites within a two mile radius of the tower with associated maps.

The majority of the project consists of mostly aerial fiber optic cable placement on existing utility pole lines, a small amount of underground fiber placement where pole line does not exist, and fiber connections to three existing towers. Additional information on the environmental impact for the remainder of the proposed project construction is contained in the Buffer Site 0 and 1 Database Reports. The following project maps detail the footprint of the construction route.

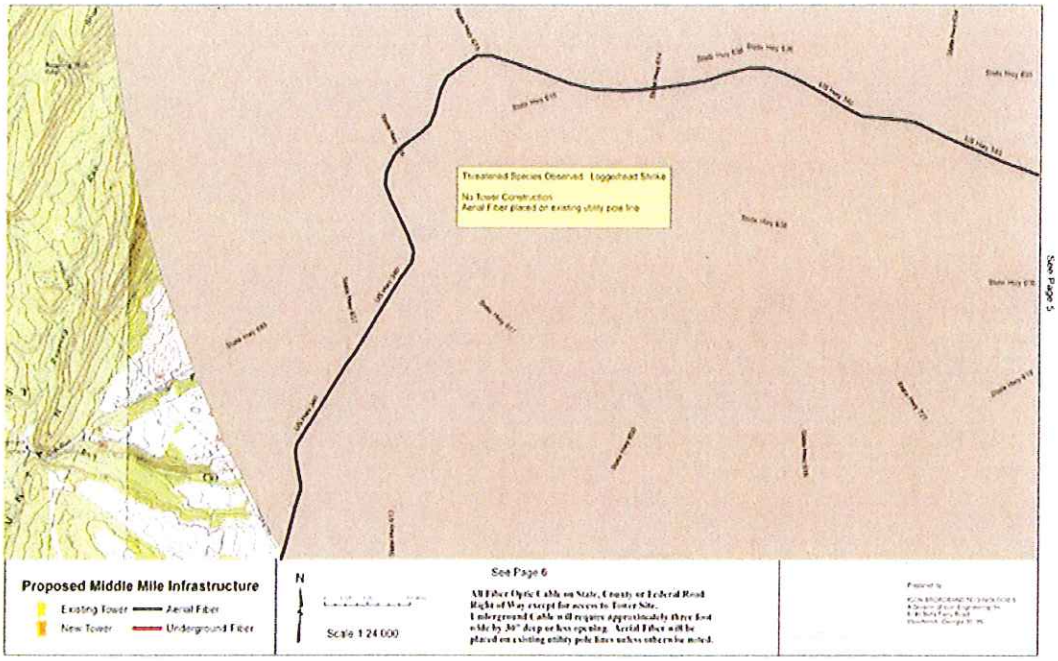
The following map is file name PageCo 1410 Tower Site 1 Map Page 2.pdf.



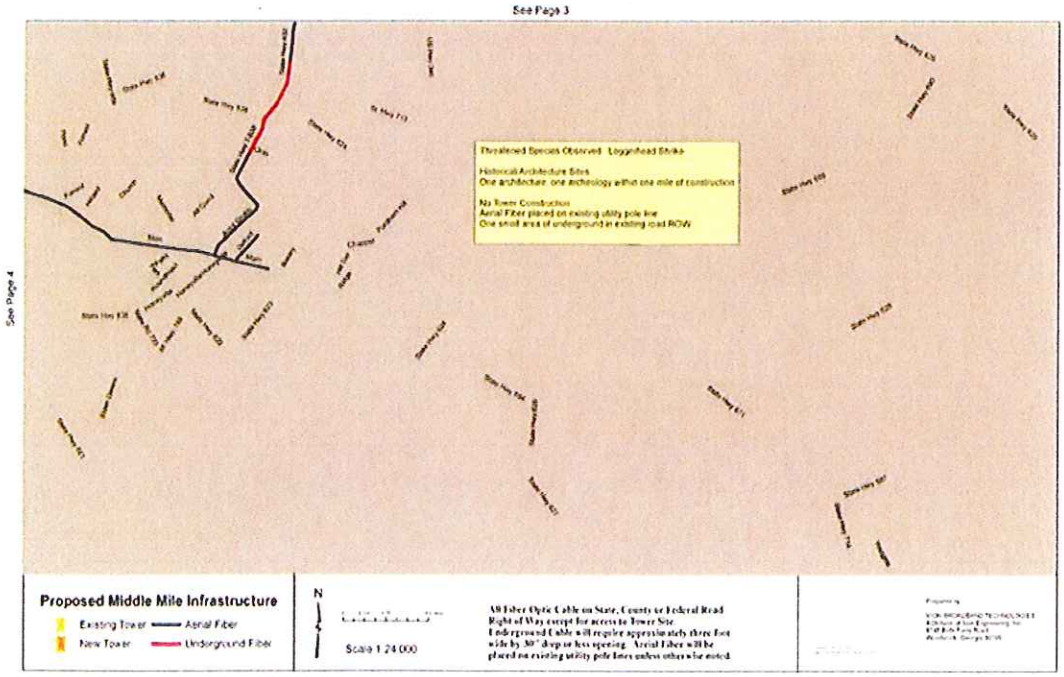
The following map is file name PageCo 1410 Tower Site 2 Map Page 3.pdf.



The following map is file name PageCo 1410 All Aerial Map Page 4.pdf.



The following map is file name PageCo 1410 Aerial_UG Map Page 5.pdf.



Aerial Snapshot – Existing Tower Site 2, Stanley

Aerial Snapshot – Existing Tower Site 3, Shenandoah

Building Construction

The network operating center (NOC) will be located within existing county facilities on Court Street in Luray. The proposed NOC will provide space for collocating service provider equipment and aggregation. This property is zoned B-1 (Business District), but will not require new construction or result in any environmental impact. The building to be utilized is not 50 years old or older. A back up (future) operating center is proposed at the County Tech Park near Stanley to coincide with the planned data center network; this proposed future expansion is not included in the current grant application.

At the tower sites it is possible a small co-location of equipment might be required in the form of a pedestal or not larger than a 10' by 10' co-location cabinet that would be positioned on the concrete slab already constructed to hold the self supporting tower. Tower construction in Page County will consist of one (1) self supporting tower (no guys) at an approximate height of 199 feet. The tower will rest on a 20 foot square piered concrete slab surrounded by a 60 foot square fenced area.

Fiber Construction

Where underground deployment is required, fiber optic cable will be installed within the VDOT and local government ROW. All aerial fiber will be placed on existing utility pole lines unless otherwise noted and in Page County virtually all fiber is to be deployed aerially on existing poles. There are small areas of underground fiber construction in Luray by the hospital and to the County Government Center, and at two railroad crossings near Stanley. Trench, directional bore or missile bore shall be thirty (30) inches in depth with a total disturbed area an anticipated maximum of three (3) feet in width. The planned deployment aerially and underground will be on previously disturbed ROW.

iv. Buildings and Other Structures

At the tower sites it is possible a small collocation of equipment might be required in the form of a pedestal or not larger than a 10' by 10' collocation cabinet that would be positioned on the concrete slab already constructed to hold the self supporting tower.

v. Wetlands

These results are derived from the Page Buffer 0 Database Records Report; Page Buffer 1 Database Report, and Page Site 0 (Rileyville tower) Database Report.

- Rileyville Site 0 tower is not located on or near threatened or endangered waters or wetlands and there is no cold water stream (trout stream).

Fiber construction—all fiber construction is anticipated on existing poles or right of way. Until make ready engineering and walk out can be completed any encounter of unanticipated wetlands cannot be assured. However, because detailed design will not be completed until after make ready engineering is complete the final design will attempt to avoid disturbance to any wetland.

vi. Critical Habitats

Within this county there are few threatened species[3] within a two mile radius of the expected construction as shown on the Page County maps and within the Site and Buffer Database Reports. The whole county has numerous historical buildings, farms and archeological locations. The tower site has been put in areas unlikely to have any impact on these habitats even though there are sites within a thousand feet of the proposed tower. Explanations are given where applicable.

- New tower site located in Rileyville at the Springfield Elementary School—derived from Page Site 0 Database Report
  - Threatened species – None within a two mile radius. Those likely to be found within a four mile radius include the Loggerhead Shrike. As the tower is located in a cleared area on the school property, it is unlikely these species will be affected.

Fiber deployment aerial or underground should have no impact on the habitat as they are deployed on existing ROW or pole line. Please refer to Page Buffer Database Reports.

vii. Floodplains

The Rileyville tower site does not lie within a 100 or 500 year flood plain.

[3] As used in this document threatened species refers to State or Federally endangered or threatened species.

This information was confirmed from the FEMA floodplain map on the FEMA.gov website and FIRMettes for Page County, Virginia.

viii. Protected Lands

The data on protected lands within a one mile radius of the proposed new Page County tower is as follows:

- Tower Site 0 Rileyville—
  - Nearest historical and archeological sites—the proposed new tower is to be located on cleared previously disturbed land on the school property. The entire community is included in an architectural polygon. Disruption to the surrounding area will be limited to an approximate 60 foot square area.
  - Nearest conservation sites—None within one mile

Fiber construction will not impact historic or archeological areas as it is all planned on existing ROW or pole lines.

The project is located within a Page County Rural Historic District that constitutes that area roughly defined by the Shenandoah River to the west, the boundary of the Shenandoah National Park to the east, Route 211 north of Luray to the south, and northern limit along a line from Indian Hollow Bridge (Route 613) followed southeast and terminating at the point of the National Park Service property north of Brush Mountain. The land and resources, both architectural and archaeological, included within the above boundaries represent over 200 years of Euro-American occupation in the Page Valley.

The project will not use or alter any building constructed more than 50 years ago.

The project is not located on any tribal lands.

ix. Coastal Areas

Page County is not located in an area designated as a coastal zone or one administered by the Virginia Coastal Resources Management Program.

x. Brownfields

There are no brownfields within Page County.

Signature Page

The required Environmental Questionnaire signature page follows this page.

OMB Number: 0660-0031
Expiration Date: 01/31/2010

Broadband Infrastructure Application
Submission to RUS (BIP) and NTIA (BTOP)

Environmental Questionnaire

Any project-related activity that may adversely affect the environment must not be undertaken prior to the completion of Rural Utilities Service/National Telecommunication and Information Administration environmental review process. Doing so may jeopardize consideration of your application. All of the following questions must be completed or the application will be considered incomplete. Note: The applicant may submit a copy of any environmental review document that has been prepared in connection with obtaining permits, approvals, or other financing for the proposed project from State, local or other federal bodies. Such material, to the extent relevant, may be used to meet the requirements herein.

i. **Project Description:-** Describe all project-related construction activities, including, but not limited to building construction related to installing pre-fabricated buildings; internal modifications, or equipment additions to buildings or other structures (e.g., relocating interior walls or adding computer facilities); the construction and installation of buried cable; or installation of telecommunications transmission facilities including construction of new monopole towers, satellite dishes. Complete descriptions must be provided for each site affected by project-related construction activities.

ii. **Map:** Include a map for each site affected by construction (recommend U.S. Geological Survey 7.5-minute quadrangle maps at a map scale of 1:24,000; larger scale maps may be provided for site-specific proposals). USGS maps may be obtained and purchased at the following website: http://www.usgs.gov/pubprod/maps.html. If appropriate, photographs or aerial photographs of site-specific proposals may be provided.

iii. **Property Changes:** Describe and indicate the amount of property to be cleared, excavated, fenced, or otherwise disturbed by the project and describe the current land use and zoning for each project site affected by construction including whether the project is proposed to be located on public land owned or managed by the federal government.

iv. **Buildings:** Describe buildings or other structures (i.e., transmission facilities), including dimensions, to be constructed or modified. For linear projects, state whether the project is to be located on or within previously disturbed public rights-of-way.

v. **Wetlands:** Describe and indicate whether wetlands are present on or near the project site(s) affected by construction (maps of wetlands may be obtained from the U.S. Fish and Wildlife Service's National Wetland Inventory website: http://www.fws.gov/wetlands/ or from soil maps obtained from the USDA, Natural Resource Conservation Service's website: http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm).

vi. **Critical Habitats:** Describe and indicate whether any project site(s) include or are near critical habitats or will affect any threatened, endangered or candidate species. Applicants must provide species lists and appropriate specie accounts

OMB Number: 0660-0031
Expiration Date: 01/31/2010

Broadband Infrastructure Application
Submission to RUS (BIP) and NTIA (BTOP)

obtained from the U.S. Fish and Wildlife Service's website: http://ecos.fws.gov/tess_public/ for each county affected by construction of the project.

vii. **Floodplains:** Describe whether or not any facility(ies) or site(s) are located within a 100 or 500-year floodplain. Information related to floodplains and National Flood Insurance Maps may be obtained from the Federal Emergency Management Agency's (FEMA) website http://www.msc.fema.gov/webapp/wcs/stores/servlet/CategoryDisplay?catalogId=10001&storeId=10001&categoryId=12001&langId=-1&usertype=G&type=1. If any project-related construction activities are within floodplains, a copy of the FEMA, "FIRMette" with construction activities depicted on the map must be included. For obtaining FIRMettes review the tutorial provided by FEMA.

viii. **Protected Lands:** Describe any cultural resources, including *historic properties*, i.e., properties listed in or eligible for listing in the National Register of Historic Places, which are located in or within a one-mile radius of the project area and how they may be impacted by the project. Information related to historic properties can be obtained from the State Historic Preservation Office (SHPO) in your respective State - see the website of the National Conference of SHPO: http://www.ncshpo.org/find/index.htm or from the Tribal Historic Preservation Officer (THPO) when tribal lands are involved. Applicants must gather information about the nature and location of these properties from the SHPO. SHPOs should be asked the following questions:

1. Is the proposed project located on, within or adjacent to any properties listed in or eligible for listing in the National Register of Historic Places? Is the proposed project located on, within or adjacent to a National Historic Landmark? If the answer is yes, describe and indicate the geographic relationship between the project and property with maps.
2. Will the proposed project impact, use or alter a building or structure that was constructed more than 50 years ago? If so, describe the building/structure with a statement of its condition, including photographs, and document its age.
3. Is any portion of the project located on tribal lands, meaning lands within the exterior boundaries of any Indian reservation and all dependent Indian communities?
4. Applicants must provide SHOP/THPO responses/information to these questions including any correspondence with the SHPO/THPO, as applicable.

ix. **Coastal Areas:** Determine whether or not the project is within the boundaries of a coastal zone management area (CZMA). For boundary related and contact information related to CZMA, see National Oceanic and Atmospheric Administration, Office of Ocean and Coastal Resource Management's website: http://coastalmanagement.noaa.gov/consistency/welcome.html

OMB Number: 0660-0031
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Broadband Infrastructure Application
Submission to RUS (BIP) and NTIA (BTOP)

x. **Brownfields:** Determine whether the project is located within a brownfield site. Per 42 U.S.C. 9601, the term "brownfield site" means real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Maps and locations of sites, facilities and properties that have been contaminated by hazardous materials and are being, or have been, cleaned up under EPA's Superfund, RCRA and/or brownfields cleanup programs can be found at the following website: http://iaspub.epa.gov/Cleanups/.

Note: The applicant may submit a copy of any environmental review document that has been prepared in connection with obtaining permits, approvals, or other financing for the proposed project from State, local or other federal bodies. Such material, to the extent relevant, may be used to meet the requirements herein.

Printed Legal Name of Applicant: Page County Broadband Authority

Signature: Bernard P Mill Date: December 14, 2009

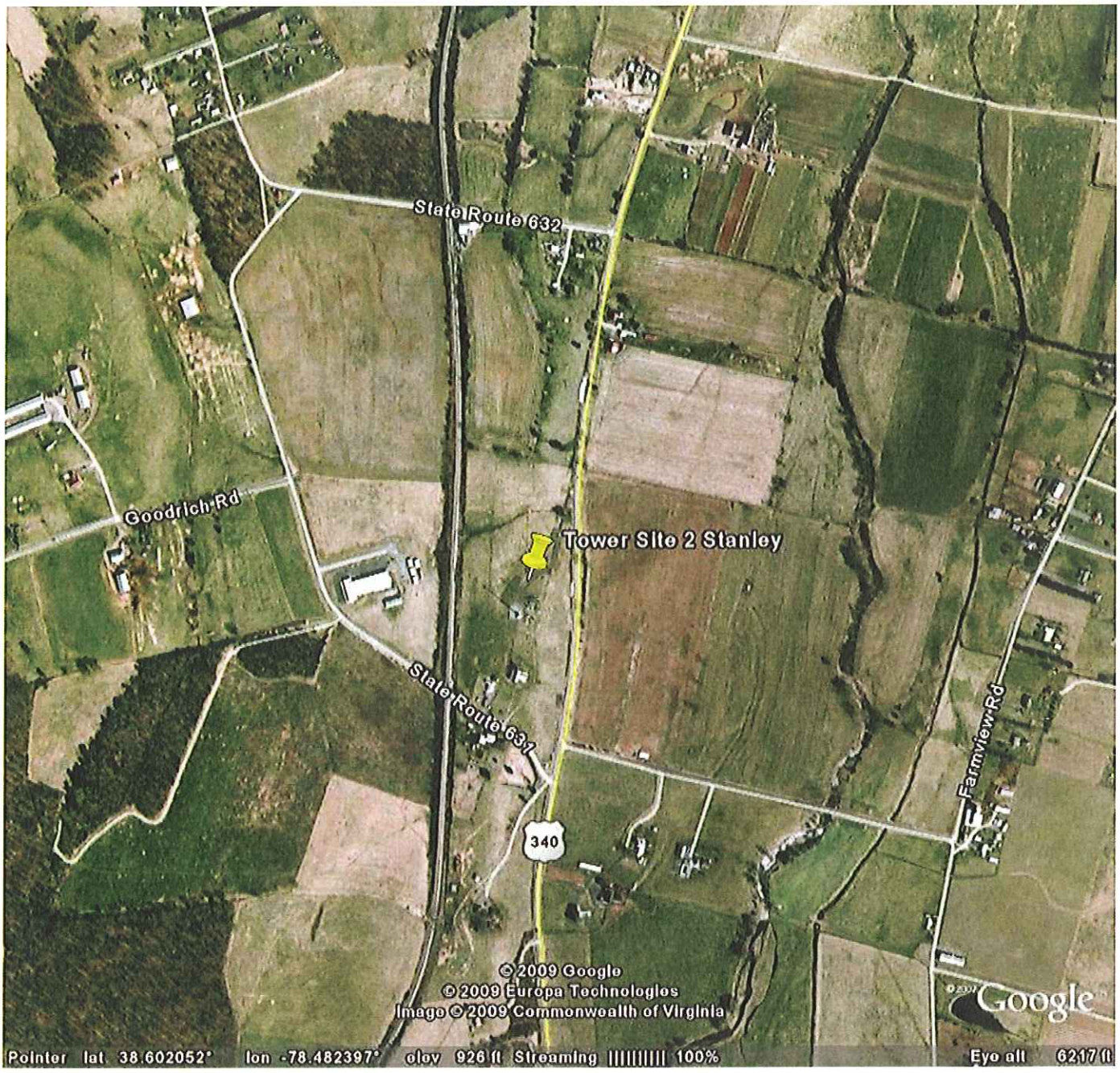
The applicant's representative certifies to the best of his/her knowledge and belief that the information contained herein is accurate. Any false information may result in disqualification for consideration of financial assistance or the rescission of financial assistance.

Page County, Virginia

Tower Site 0 - Rileyville (New Construction)
Springfield Elementary School
Big Spring Lane and Highway 340

Page County, Virginia

Tower Site 1 - West Luray (Existing)
Easy Radio ASR #101250637
1057 US Highway 211 West



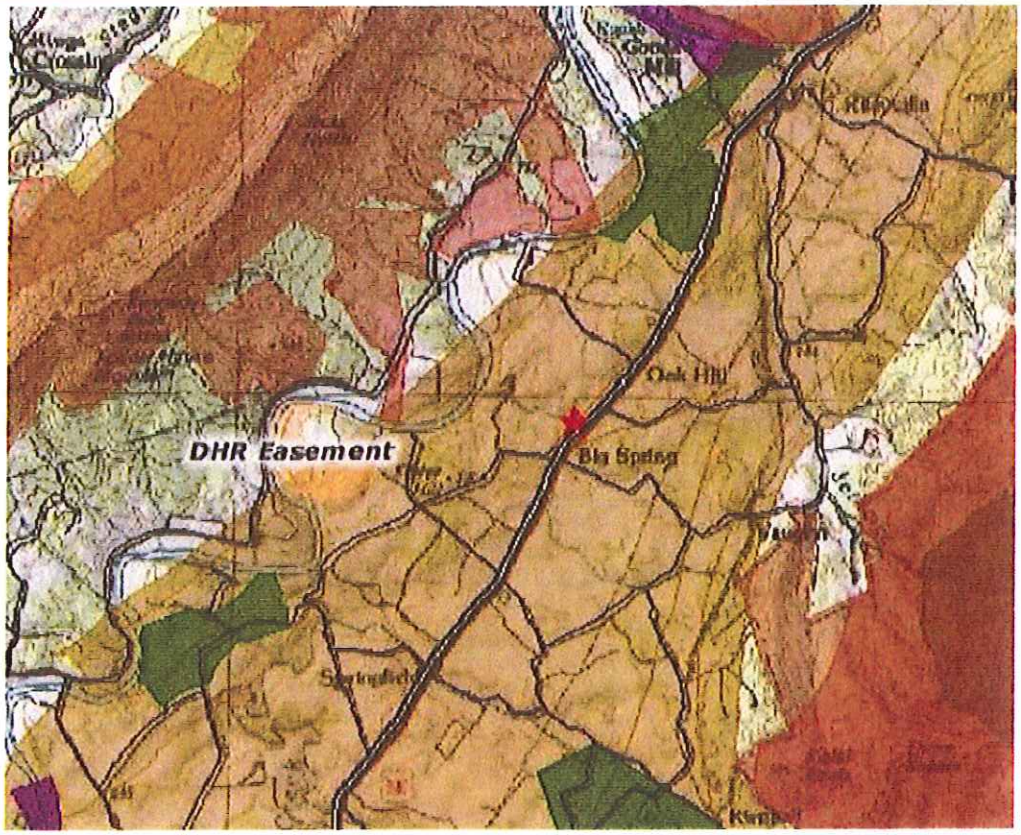
Page County, Virginia

Tower Site 2 - Stanley (Existing)
4402 US Highway 340

Page County, Virginia

Tower Site 3 - Shenandoah (Existing)
303 Virginia Avenue

SITE DATABASE RECORDS REPORT



Page Buffer 0

Page County, Virginia

78° 25' 17.7 W, 38° 43' 45.65 N

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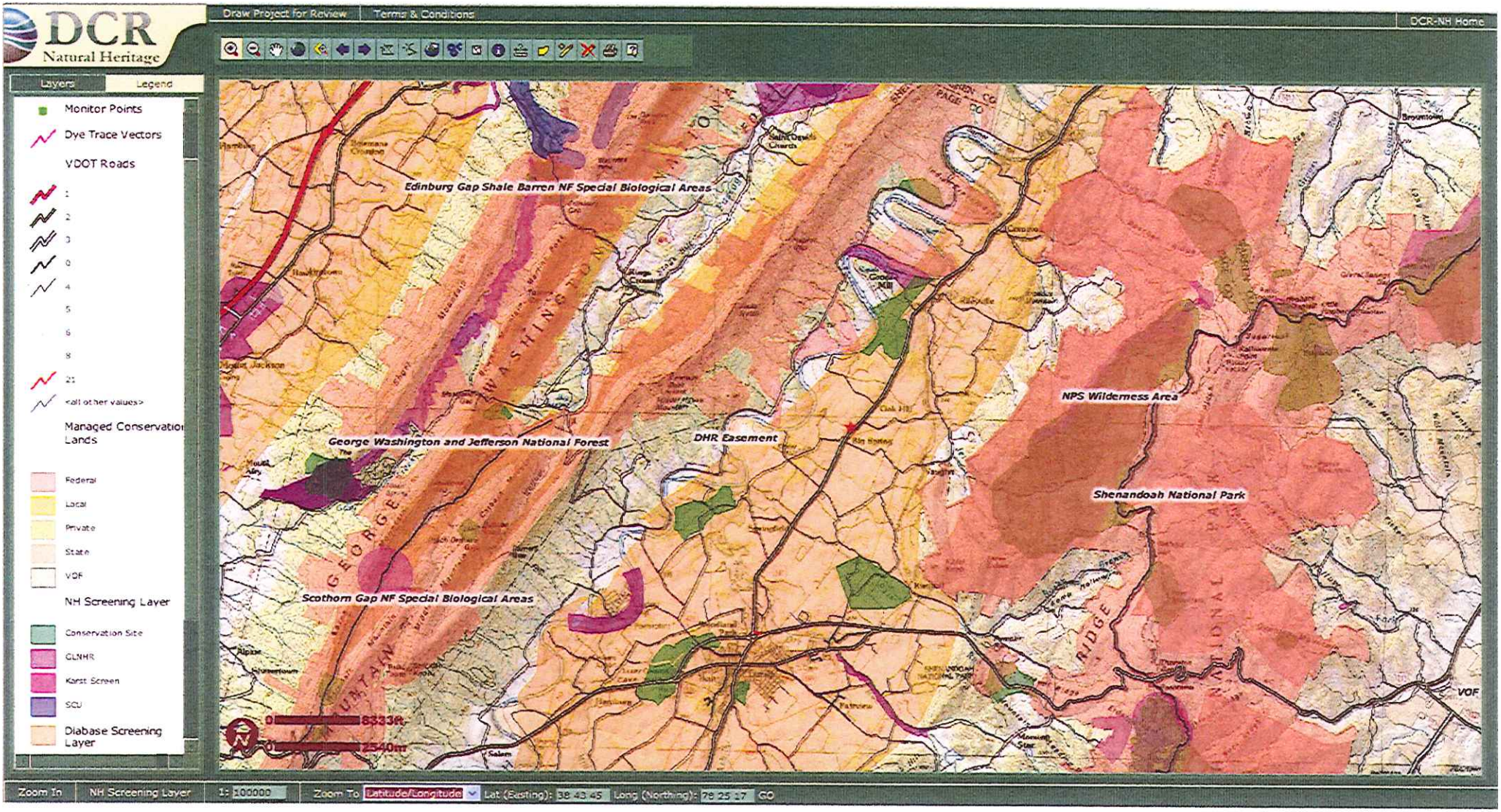
www.clarknexsen.com


DCR
Natural Heritage
Draw Project for Review
Terms & Conditions
DCR-NH Home
Layers
Legend
Monitor Points
Dye Trace Vectors
VDOT Roads
1
2
3
0
4
5
6
8
21
<all other values>
Managed Conservation Lands
Federal
Local
Private
State
VOF
NH Screening Layer
Conservation Site
GLNHR
Karst Screen
SCU
Diabase Screening Layer
Edinburg Gap Shale Barren NF Special Biological Areas
George Washington and Jefferson National Forest
DHR Easement
NPS Wilderness Area
Shenandoah National Park
Scothorn Gap NF Special Biological Areas
VOF
0
8333ft
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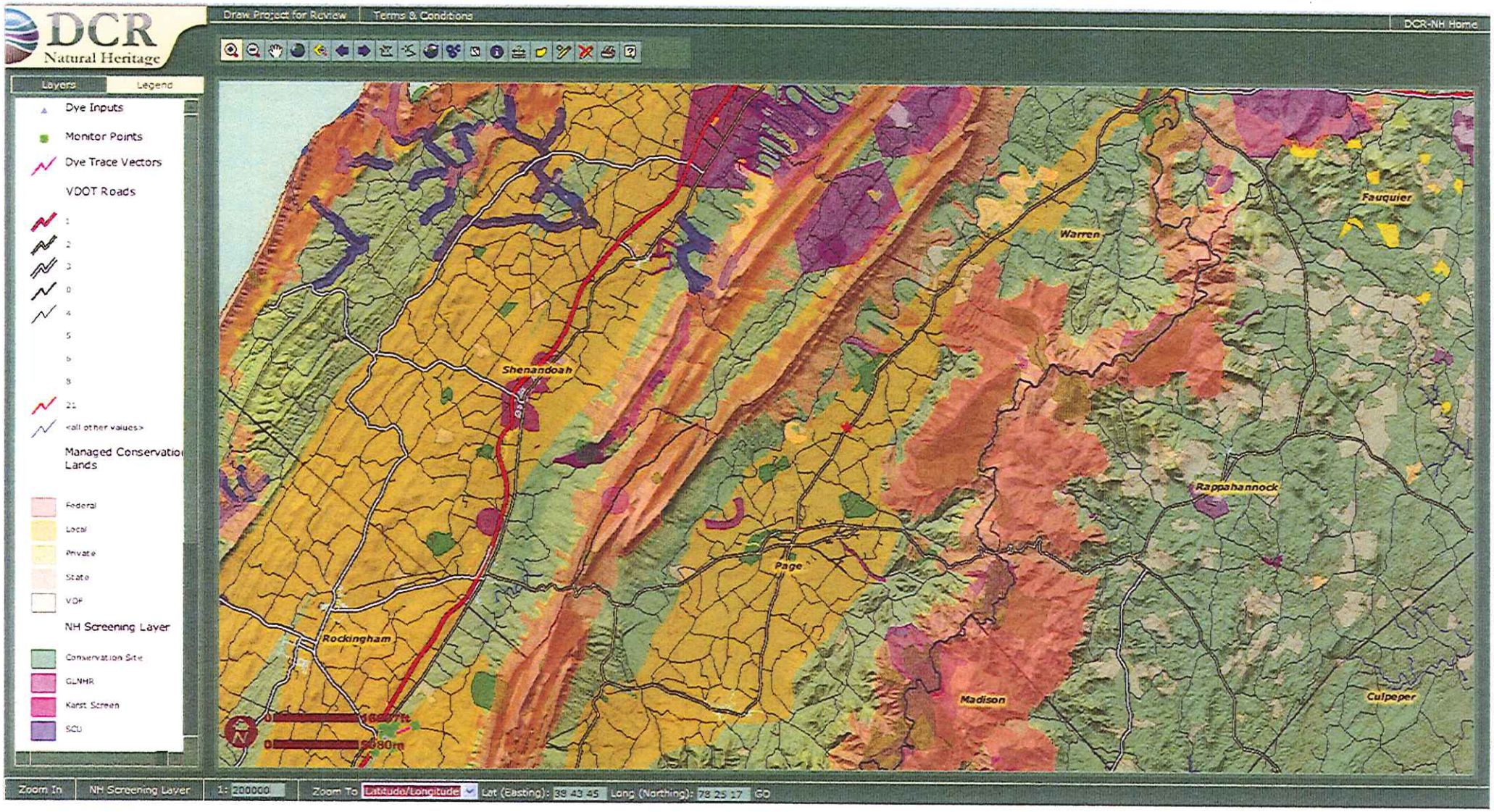
Zoom In
NH Screening Layer
1: 100000
Zoom To
Latitude/Longitude
Lat (Easting): 38 43 45
Long (Northing): 78 25 17
GO


DCR
Natural Heritage
Draw Project for Review
Terms & Conditions
DCR-NH Home
Layers
Legend
Dye Inputs
Monitor Points
Dye Trace Vectors
VDOT Roads
1
2
3
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4
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8
21
<all other values>
Managed Conservation Lands
Federal
Local
Private
State
VDF
NH Screening Layer
Conservation Site
GLNHR
Karst Screen
SCU
Shenandoah
Rockingham
Page
Warren
Fauquier
Rappahannock
Madison
Culpeper
Zoom In
NH Screening Layer
1: 200000
Zoom To
Latitude/Longitude
Lat (Easting): 38 43 45
Long (Northing): 78 25 17
GO

Virginia Department of Game and Inland Fisheries

12/11/2009 2:22:03 PM

Fish and Wildlife Information Service

VaFWIS Initial Project Assessment Report Compiled on 12/11/2009, 2:22:03 PM

Help

Known or likely to occur within a **10 mile radius of 38,43,45.9 78,25,17.9 in 113 Madison County, 139 Page County, 157 Rappahannock County, 171 Shenandoah County, 187 Warren County, VA**

575 Known or Likely Species ordered by Status Concern for Conservation (displaying first 39) (39 species with Status* or Tier I**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
020045	FESE	I	Salamander, Shenandoah	Plethodon shenandoah	Yes	Collections,BOVA
050023	FESE	I	Bat, Indiana	Myotis sodalis		BOVA
040267	SE	I	Wren, Bewick's	Thryomanes bewickii		BOVA
060006	SE	II	Floater, brook	Alasmidonta varicosa	Yes	Collections,TEWaters,BOVA
030062	ST	I	Turtle, wood	Glyptemys insculpta	Yes	Collections,TEWaters,BOVA
040096	ST	I	Falcon, peregrine	Falco peregrinus	Yes	Collections,BOVA
040129	ST	I	Sandpiper, upland	Bartramia longicauda		BOVA
040293	ST	I	Shrike, loggerhead	Lanius ludovicianus	Yes	BBA,BBS,CBC,BOVA
100155	FSST	I	Skipper, Appalachian grizzled	Pyrgus wyandot		BOVA
040093	FSST	II	Eagle, bald	Haliaeetus leucocephalus	Yes	Collections,ObsBook,BOVA
060081	ST	II	Floater, green	Lasmigona subviridis	Yes	TEWaters,BOVA
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans		BOVA
100248	FS	I	Fritillary, regal	Speyeria idalia idalia	Yes	Collections,BOVA
060050	FSSS	II	Pigtoe, Tennessee	Fusconaia barnesiana		BOVA

040372	SS	I	Crossbill, red	Loxia curvirostra	Yes	CBC
040306	SS	I	Warbler, golden-winged	Vermivora chrysoptera		BOVA
020027	SS	II	Salamander, Cow Knob	Plethodon punctatus		BOVA
040213	SS	II	Owl, northern saw-whet	Aegolius acadicus	Yes	CBC
040266	SS	II	Wren, winter	Troglodytes troglodytes	Yes	Collections,BBA,CBC,BOVA
030063	CC	III	Turtle, spotted	Clemmys guttata	Yes	Collections,BOVA
040094	SS	III	Harrier, northern	Circus cyaneus	Yes	CBC,BOVA
040204	SS	III	Owl, barn	Tyto alba pratincola	Yes	Collections,BBA,CBC,BOVA
060071	SS	III	Lampmussel, yellow	Lampsilis cariosa	Yes	Collections
030012	CC	IV	Rattlesnake, timber	Crotalus horridus	Yes	Collections,BOVA
040264	SS	IV	Creeper, brown	Certhia americana	Yes	Collections,BBA,CBC,BOVA
040364	SS		Dickcissel	Spiza americana		BOVA
040032	SS		Egret, great	Ardea alba egretta		BOVA
040366	SS		Finch, purple	Carpodacus purpureus	Yes	CBC,BOVA
040241	SS		Flycatcher, alder	Empidonax alnorum		BOVA
040285	SS		Kinglet, golden-crowned	Regulus satrapa	Yes	CBC,BOVA
040112	SS		Moorhen, common	Gallinula chloropus cachinnans		BOVA
040262	SS		Nuthatch, red-breasted	Sitta canadensis	Yes	Collections,BBA,CBC,BOVA
040210	SS		Owl, long-eared	Asio otus	Yes	CBC
040189	SS		Tern, Caspian	Sterna caspia		BOVA
040278	SS		Thrush, hermit	Catharus guttatus	Yes	Collections,CBC,BOVA

040314	SS		Warbler, magnolia	Dendroica magnolia		BOVA
050045	SS		Otter, northern river	Lontra canadensis lataxina		BOVA
040225		I	Sapsucker, yellow-bellied	Sphyrapicus varius	Yes	CBC,BOVA
040319		I	Warbler, black -throated green	Dendroica virens	Yes	Collections,BBA,BOVA

To view **All 575 species** View 575

* FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; FS=Federal Species of Concern; SC=State Candidate; CC=Collection Concern; SS=State Special Concern

** I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need

Anadromous Fish Use Streams

N/A

Colonial Water Bird Survey

N/A

Threatened and Endangered Waters (3 Reaches)

View Map of All Threatened and Endangered Waters

Stream Name	T&E Waters Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
North Fork Shenandoah River (02070006)	SE	060006	SE	II	Floater, brook	Alasmidonta varicosa	Yes
		060081	ST	II	Floater, green	Lasmigona subviridis	
North Fork Shenandoah River (02070006)	SE	060006	SE	II	Floater, brook	Alasmidonta varicosa	Yes
Passage Creek (02070006)	ST	030062	ST	I	Turtle, wood	Glyptemys insculpta	Yes

Cold Water Stream Survey (Trout Streams) Managed Trout Species (18 records) (Click on Stream Name to view complete reach history)

View Map of All Cold Water Stream Surveys

Reach ID	Stream Name	Class	Brook Trout	Brown Trout	Rainbow Trout	View Map
07DNF-01	Dry Run, NF	Wild trout	Y			Yes
07DSF-01	Dry Run, SF	Wild trout	Y			Yes
07FNT-01	Flint Run	Stockable				Yes
07GNY-01	Gooney Run	Wild trout	Y			Yes
07JER-01	Jeremys Run	Wild trout	Y			Yes
07MTR-01	Mountain Run	Stockable				Yes
07OVL-01	Overall Run	Wild trout	Y			Yes
07PMR-01	Peters Mill Run	Stockable				Yes
07PSG-01	Passage Creek	Stockable				Yes
07PSS-01	Pass Run	Wild trout			Y	Yes
07PSS-01T	Pass Run	Wild trout				Yes
07PSS-02	Pass Run	Wild trout	Y		Y	Yes
07STY-01	Stony Creek	Stockable				Yes
08HAH-01	Hannah Run	Wild trout	Y			Yes
08HAZ-01	Hazel River	Wild trout	Y			Yes
08HUE-01	Hughes River	Wild trout	Y	Y		Yes
08THO-01	Thorton River	Wild trout	Y			Yes
08THR-01	Thorton River, NF	Wild trout	Y			Yes

Public Holdings: (3 names)

Name	Agency	Level

Shenandoah National Park	National Park Service	Federal
George Washington National Forest	U.S. Forest Service	Federal
Andy Guest/Shenandoah River State Park	VA Dept. of Conservation and Recreation	State

audit no. 271256 12/11/2009 2:22:03 PM Virginia Fish and Wildlife Information Service

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pricing has been set at a level that is affordable in comparison to existing services.

F. Technology Strategy

28. Technology Type:

Wireline - Fiber-optic Cable
Wireless - Terrestrial Fixed
Wireless - Terrestrial Mobile

Other:

29. System Design

The Page County Middle Mile Project consists of a 37-mile fiber optic network serving a path from north of Luray, Virginia along a track adjacent to US Highway 340 (Business) through the town of Stanley, terminating in the town of Shenandoah at the south end of Page County.

The fiber network will be built to augment or overlay existing telecommunications networks (copper, coaxial cable, wireless, etc.), and would serve the dual purpose of being a backhaul distribution network and a new access network for customers residing within approximately 500 linear feet of the fiber.

- A 48-strand network will connect the three major towns of the county, and has been designed to pass within 500 feet of each of the major community health care, educational or municipal facilities.

- Additionally, a 144-strand fiber network within each of the three communities would provide for consumer access to the network. Fiber storage loops every 1000 feet will allow fiber to reach new areas.

The majority of the network (estimated to be 97 percent) would be carried over utility poles belonging to Allegheny Power. The remainder would be buried underground in appropriate rights-of-way and through new or existing conduits.

Topography of the network is as follows:

- Three (3) miles of backbone fiber deployed from Springfied Elementary School in Rileyville, in the northern part of the county, to Luray.

- Nine (9) miles of backbone fiber deployed from the County Complex on Court Street in Luray and extending into the Town of Stanley. From Court Street the network follows Highway 638 south to Highway 629 east, turning south on Highway 340, turning back northwest on Highway 631 to west on Highway 632 (Goodrich Road) passing the Page County Technical School, future County Tech Park and PTS data center, continuing into the Town of Stanley where it becomes Highway T-638, turning south on Aylor Grubbs then east on Main Street ending at the Stanley Fire Department.

- Five (5) miles of distribution fiber deployed throughout the Town of Luray and interconnecting with the backbone fiber at the Emergency Communications Center on Court Street.

- Twelve miles (12) of backbone fiber continuing from Stanley to the Page County High School north of Shenandoah.
- Eight (8) miles of continuing backbone fiber to Shenandoah, connecting to the town offices, the fire department, the police department and other core community tenants.

The Page County Broadband Authority will provide for a front-end Network Operations Center with equipment racks, routers, environment controls, multiple redundant power sources, connection to a main network for bandwidth and backhaul traffic out of the county, and an outside plant fiber distribution transport network. The outside plant would consist of approximately 17.5 miles of distribution fiber and approximately 7.5 miles of access network.

The network will be a mixed dark fiber and community network. The community portion of the network will be implemented to interconnect government offices, schools, medical facilities, emergency first-responder agencies and libraries through a system of private networks capable of providing for advanced eHealth, eLearning and eGovernment applications. This section of the network will be lit up by the Page County Broadband Authority and managed under a contract to a single entity that will provide network operation and interconnection services to the contracted community and core tenant customers.

The dark fiber portion of the network will consist of two sections. The first section is to be leased to third parties as dictated by the laws of the State of Virginia with respect to Internet Service Providers, and will serve as the foundation for provision of high-speed broadband Internet services to the currently underserved and unserved populations of Page County. The second section will be leased to private parties as backhaul for networks of DSL, cable, wireless and 4G cellular services.

30. Network Diagram:
Please refer to upload section at the end of document.

31. Certification by Professional Engineer:
Please refer to upload section at the end of document.

32. Buy American Waiver Request:
Is the applicant seeking an individual waiver of the Buy American provision? No

Buy American Waiver Request – Legal Justification

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33. Choice of Service Provider:

Does the project's Infrastructure and the Company's business plan allow more than one provider to serve end users in the proposed funded service area?

Yes

G. Project Milestones and Completion Factors

Timeline & Milestones

34. Infrastructure Build-out Timeline:

Please refer to upload section at the end of the document.

35. Licenses, Regulatory Approvals and Agreements:

We will need right of way permits from Virginia Department of Transportation for those sections of the fiber that will be in the ground (only 2 miles). Right of way permits will also be secured from Shenandoah Electric Cooperative for fiber to be strung on the poles. Contact has already been made and permits will be obtained as soon as funding is secured.

36. Construction and Vendor Contracts

The Page County Broadband Authority will not hire staff for construction or any other types of activities needed to deploy our middle mile project. The Page County BBA will rely 100% on vendors and contractors to build the infrastructure of the project.
As mandated by the Code of Virginia, the Page County BBA may not enter into any signed contracts until funding has been secured. Since funding has not yet been received for the construction phase of the project, there are no signed contracts at this time.

We have substantive letters of commitment from the likes of Shental Shenandoah Telecommunications to move forward once we are legally able to do so.

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Qualification of Management Team and Organizational Readiness

37. Management Team Resumes:

Please refer to upload section at the end of the document.

38. Organizational Readiness:

The Page County Broadband Authority's sole purpose under the Code of Virginia is to implement policy in order to operate broadband activity throughout its jurisdictional area. The organization is governed by the Code of Virginia, articles of incorporation and by specific operational procedures adopted by the Authority. In addition the Authority has created a management sub-team that will be responsible for the actual construction and operational implementation of the middle mile fiber network. This management team is populated with experts in telecommunication, marketing and business management.

When the network is at the point of being operational, it is the intention of the Page County Broadband Authority and the management team to contract with capable ISP's who already have the capabilities in place to provide sales, network management, billing and customer care.

Other

39. Organizational Chart:

Please refer to upload section at the end of document.

40. Legal Opinion:

Please refer to upload section at the end of document

41. Government and other Key Partnerships:

Our strategy for partnering is to reach out to organizations and facilitate cooperation which is evidenced by the attached letters:

The Northern Shenandoah Valley Regional Commission is the lead planning agency for this region. The BBA fiber project is the number one development priority from this agency.

The County of Warren, Virginia is interested in a multi-jurisdictional partnership.

The Shenandoah Valley Partnership is a regional economic agency. A fiber network will enhance SVP's ability to help Page County attract higher-wage firms to the area.

Shentel, a regional telecommunications company, has towers within reach of the middle mile project and will provide last mile build out as well as generate significant revenues for the project.

The fiber network will enable Page Memorial Hospital to deliver services at satellite offices in Stanley and Shenandoah where LMI populations live. It will provide access to telemedicine from health care facilities located in Winchester, VA (50 miles away).

Fiber connection to Lord Fairfax's campuses (50 miles away) will deliver new educational opportunities to local students. Page County high school graduation rates are competitive with the rest of Virginia, but post-secondary rates are significantly lower. Better access to post-secondary education is critical to improve career opportunities.

Page County Public Schools and Massanutten Regional Library are establishing programs using high speed for children and disadvantaged populations. MRL is in discussions with the Library of Virginia and the Gates Foundation to bring high speed to all libraries in this region.

Page County's Fire and Emergency Medical Services and Sheriff's Office are committed to using high speed communications to enhance their services.

Premier Technical Services is building a Data Center and COOP facility in Page County, creating high-paying jobs.

42. Recovery Act and Other Governmental Collaboration.

Page County has already secured the support and involvement of the Commonwealth of Virginia Department of Housing and Community Development in its broadband initiative. The investment of $120,000 (Community Development Block Grant) was used to secure the services of Icon Broadband Technologies, a division of Icon Engineering Inc. and Consulting Gateway Corporation. These firms were tasked with completing an in-depth

telecommunications planning study designed to answer questions relating to the need for broadband infrastructure, options for providing connectivity, ways to organize potential networks and also address funding requirements. The study management team was comprised of key county stakeholders representing economic development, healthcare, public schools and high education, and leaders from the business community.

The work was initiated and completed in 2008 and included several reports: an Executive Summary; Community Broadband Planning Study and Community Broadband Network Implementation Plan.

The investment by DHCD has established a strong foundation of knowledge regarding the current needs, existing technologies, market forces and opportunities facing Page County as it relates to broadband. The in-depth analysis of community needs and market forces has laid out a clear direction for start-up and implementation phase of a fiber network. This financial commitment by DHCD has enabled Page County to move forward with its broadband planning and the investment will be leveraged by BIP and/or BTOP funding to build the fiber network.

DHCD is currently considering a further investment of $200,000 (Community Development Block Grants Local Innovation Program) which will be used to finance construction of the fiber network.

Community Involvement (BTOP Applicants Only)

43. Partnering with Disadvantaged Businesses

In March 2008, a Request for Interest was sent out by Icon Technologies for Broadband Network Access and Services. Premier Technical Services, a Service Disabled Veteran Owned Small Business and HUBZone Certified Small Business Concern responded to this request.

Premier provides services and products that address IT challenges facing customers in their day-to-day operations. Premier's goal is to provide end-to-end IT solutions that enable its customers to focus on their business without being hampered by shortcomings in their information systems. Premier transforms technology into a strategic tool which is used to build

and maintain their customers' businesses.

In the Letter of Intent submitted, David Tong (President and CEO), agreed in principle to explore opportunities that would significantly enhance their ability to service clients both within Page County and the overall region.

H. Project Budget

44. General Overall Budget

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Budget	Loan Request	Grant Request	Equity	Debt	Bond	Other
Network & Access Equipment (switching, routing, transport, access)		66,000	16,500			
Outside Plant (cables, conduits, ducts, poles, towers, repeaters, etc.)		1,194,985	298,746			
Buildings and Land – (new construction, improvements, renovations, lease)						
Customer Premise Equipment (modems, set-top boxes, inside wiring, etc.)		89,856	22,464			
Billing and Operational Support Systems (IT systems, software, etc.)		20,000	5,000			
Operating Equipment						

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(vehicles, office equipment, other)						
Engineering/ Professional Services (engineering design, project management, consulting, etc.)		**260,100**	**65,025**			
Testing (network elements, IT system elements, user devices, test generators, lab furnishings, servers/computers, etc.)		**18,000**	**4,500**			
Site Preparation						
Other						
TOTAL BROADBAND SYSTEM		**1,648,941**	**412,235**			

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Total Budget: $ 2,061,176

45. Detailed Budget:

Please refer to upload section at the end of the document.

Sustainability

46. Reasonableness

Page County has been formally studying the deployment of Broadband for well over two years. Because they have been focusing on this issue costs have been honed to the degree possible without an actual deployment design. The number of units and the price of the units are reasonable, necessary, and appropriate for the project. Cost budgets and breakdowns are provided in the tables by category with support notations. The costs of this project are well targeted to a middle mile backbone infrastructure for providing high speed bandwidth to underserved areas of Virginia. Only with funding can the planning of this project be continued to deployment. All potential costs include pricing that reflects the best management practices including inspections and prevailing wage where appropriate.

Page has contracted with Icon Broadband Technologies (IBT) over the course of the past year to study, survey and develop cost models based on unit pricing for typical backbone capital equipment costs; ongoing operational costs; labor costs; right of way and permitting costs along with all the associated miscellaneous costs (such as maintenance). This section also specifically asks for units per household or institution served and those include a population of 15605 and 6280 residences passed by the network (53 community facilities, 745 businesses). In a middle mile deployment such as Page these units represent the backbone design and construction labor and materials and the tower design and construction both labor and materials. All costs are normal, usual and customary for this geographical area and deployment assumptions. A last mile fiber deployment by the Page is not envisioned at this time (private providers, however, have expressed their interest in providing wireless services by way of an RFI process conducted by the County).

To achieve a preliminary cost analysis IBT relied on their experience with other similar projects, and actual deployment costs for similar projects. A field make ready assessment was made of the study area. The example in the next paragraph demonstrates the degree of detail used to

provide cost and revenue projections for this application. Because IBT understands all aspects of this project they considered costs and revenue over the life of the project as demonstrated by the following example: A special cost and revenue concern requires the understanding of issues between capital expense (CAPEX) and ongoing operating expense (OPEX) in a middle mile deployment. When aerial construction on foreign pole lines is considered, you ignore the ongoing OPEX at your financial peril. Because Page County does not own a pole line to connect the fiber plant, they must pay some utility an annual fee per pole per year. Many utilities in these hard times are using their infrastructure as revenue generating sources and typically increase their pole attachment agreements annually. Other pole owners attempt to delay deployments they feel will provide competition in their area of service. In the general area of this project those agreements run from a low of $15.00 per pole to a high of $35.00 per pole per year. For financial modeling purposes the assumptions used an average cost of $26.00 per pole per and an average number of poles per mile of 26. Examination of the costs in Page led the consultants to decide that a mixture of aerial and underground deployment was the most economical method over the lifetime of the fiber. Increases in pole attachments are likely to increase continually over time. Page does not have a reliable funding source for those OPEX costs over time and therefore the use of UG fiber in some areas was justified. That is an increased CAPEX cost but one time only. This provides for a more secure, more robust and more attractive network, leaving revenue sources to be used in other ways.

47. Historical Financial Statements:
Please refer to upload section at the end of the document.

48. Broadband Subscriber Estimates:
Please refer to upload section at the end of the document.

49. Other Services:
Please refer to upload section at the end of the document.

50. Pro Forma 5-Year Financial Forecast and Assumptions:
Please refer to upload section at the end of the document.

51. Commitment of Capital Funding Support

Funds already committed in the initial planning phase were invested by the Commonwealth of Virginia Department of Housing and Community Development in the amount of a $120,000 grant in 2008. These were used to hire a consulting engineer. These

costs are not included in the overall budget.

BTOP Requirements

52. Matching Funds:

a. **Cash:** $ 200,000.00
b. **In-Kind:** $ 212,235.00
c. **Percent of Total Project Cost:** 20

53. Demonstration of Financial Need:

Page County is a distressed locality with 12.2% of the population earning below the poverty level and an unemployment rate of 11.7%. Sixty percent of residents commute to work outside the county daily. Economic development efforts to recruit businesses which pay higher salaries are hampered by a lack of high speed infrastructure to support technology-dependent industries such as those currently located in high-traffic urban areas. These realities pose a significant challenge to the Page County government and Broadband Authority in terms of generating sufficient revenue to draw on for funding local initiatives.

Because of a constrained budget and limited revenue-generating capacity, federal government grant funding for the fiber optic network is critical. Without this financial investment, the broadband infrastructure will not be built. The good news is that once it is in place many institutions and citizens are ready to take advantage of the services and opportunities that will open up to them. These efforts will generate additional revenue for the county, drawing both new jobs and businesses to this region.

Telecommunications companies will not build this network. However, it is also obvious that once it is completed, ISP's will step forward to offer competitively priced services to the citizens, companies and institutions of Page County. Shentel Shenandoah Telecommunications has written a letter of support for the fiber network infrastructure project (included with answer to question 41). Fiber backhaul from several local tower sites will allow them to deploy high speed wireless services to reach a large number of currently unserved areas. This show of support demonstrates the commitment and opportunity that is assured once the network is

completed.

54. Unjust Enrichment

No, we have not received nor have we applied for any other Federal support for this project.

55. Disclosure of Federal and/or State Funding Sources

The Page County BBA has requested a $200,000 grant from the Commonwealth of Virginia Department of Housing and Community Department.

We have received $120,000 from the Commonwealth of Virginia Department of Housing and Community Development for an initial study and preparation.

I. Self Scoring – BIP Only Self Scoring

56. Self Scoring Sheet

Broadband USA

Broadband Infrastructure Application
Submission to RUS (BIP) and NTIA (BTOP)

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Criteria	Method	Points	Self Scores
PROJECT PURPOSE			
Proportion of Rural Residents Served in Unserved Areas	1 point for every 10,000 unserved households	Up to 5	0
Rural Area Targeting	1 point for every 5% increase in the rural service area up the minimum 75% rural area requirement	Up to 5	5
Remote Area targeting	1 point for every 50 miles a service area is located from a non-rural area	Up to 5	1
Title II Borrower	If you are or were a Title II borrower	5	0
Recovery Act and other governmental collaboration	1 point will be awarded for each governmental or Recovery program the applicant is partnering with	Up to 5	1
PROJECT BENEFITS			
Performance of the offered services	If a last mile wireline project delivers 20M to household – if a last mile wireless projects delivers 2M to end-user – if a middle mile projects delivers 100M to end points	10	10
Affordable of services offered	Points awarded based on the proposed rate structure and the logistics of the proposed service area	Up to 5	5

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Choice of service provider	If the proposed infrastructure is available to be used by multiple service providers	5	5
Critical Community Facilities	If discounted rate packages at least 25% lower than advertise rates are available to critical facilities	5	5
PROJECT VIABILITY			
Applicant's organizational capability	Points will be awarded on the strengths and accomplishments of key management	Up to 12	12
Community Support	If a letter of support has been received from a designated representative of the community for every community in the proposed service territory	2	2
Ability to promptly start project	If the applicant can demonstrate that all licenses and regulatory approvals have been received, contractors and vendors are ready to enter into contracts, and equity has been deposited into applicant accounts	10	10
Socially and economically disadvantaged small businesses (SDB), as defined by section 8(a) of the Small Business Act, 15 U.S.C. §637.	If the applicant is a Section 8(a) entity	1	0
PROJECT BUDGET AND SUSTAINABLITY			
Reasonableness of the budget	Points will be awarded based the	Up to 5	5

	adequacy of the proposed budget		
Leverage of outside resources (outside funding/financing requested)	(i) 10 points if this ratio is greater than 100% (ii) 7 points if this ratio is between 100% and 75% (iii) 5 points if this ratio is between 75% and 50% (iv) 3 points if this ratio is between 50% and 25% (v) 1 points if this ratio is lower than 25%	10	1
Extent of grant funding (Grant funds/loan funds)	(i) 0 points if this ratio equals 100% (ii) 1 points if this ratio is between 100% and 75% (iii) 3 points if this ratio is between 75% and 50% (iv) 5 points if this ratio is lower than 50% (v) 10 points if no grant funds are requested	10	0
Total Points		100	62

Submitted Date: 8/17/2009 8:17:11 PM	**Easygrants ID: 1410**
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Page County Broadband Authority
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Tom M Cardman

J. BTOP Certification Requirements

Certification (Requested for BTOP)

Please refer to upload section at the end of the document regarding following uploads.

1. U.S. Department of Commerce, Broadband Technology Opportunities Program
2. SF-424D Assurances—Construction Programs (Schedule N)
3. CD-511, Certification Regarding Lobbying (Attachment O)
4. SF-LLL, Disclosure of Lobbying Activities (Attachment P)
5. CD-512, Certification Regarding Lobbying—Lower-Tier Covered Transactions (Attachment Q) This certification will not be required until the time of the grant award, because it applies to subcontractors, etc.

K. BIP Certification Requirements

Certification (Requested for BIP)

Please refer to upload section at the end of the document regarding following uploads.

1. Equal Opportunity and Nondiscrimination Certification
2. Certification Regarding Architectural Barriers
3. Uniform Relocation Assistance and Real Property Acquisition - Policies Act of 1970 Certification
4. Certification Regarding Debarment, Suspension, and Other Responsibility Matters – Primary Covered Transactions
5. Certification Regarding Lobbying for Contracts, Grants, Loans, and Cooperative Agreements

Submitted Date: 8/17/2009 8:17:11 PM	**Easygrants ID: 1410**
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Page County Broadband Authority
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Tom M Cardman

6. Network Design and Implementation Plan Certification (to be complete for projects requesting more than $1 million in federal assistance)

L. Schedules

Schedule: A-1 Congressional Districts

1. State the Congressional District of the Applicant's headquarters
Virginia - 7

2. State the Congressional District for each area covered by the Project.
Virginia - 7

M. Proposed Funded Service Area Details (BIP & BTOP)

13. Proposed Funded Service Area (BIP - Last Mile Projects):

Proposed Funded Service Area Name:
Census Blocks in Proposed Funded Service Area:
Community Name:
Rural Classification of the Community:
BIP - Service Status:

BIP - If Service Status is "Underserved" please select at least one applicable option from this list.

BTOP – Service Status:

BTOP - If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles of Community:

Submitted Date: 8/17/2009 8:17:11 PM	**Easygrants ID: 1410**
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Page County Broadband Authority
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Tom M Cardman

Total Population :
Total Number of Households:
Total Number of Businesses:
Total Number of Critical Community Facilities, Anchor Institutions and Public Safety Entities:

14. Proposed Service Area (BTOP - Middle Mile Project):

Middle Mile Span Name: **Rileyville to Luray**
Census Blocks in Middle Mile Span: TRACT BLOCK

30100 1007
30100 2005
30100 2006
30100 2033
30100 3047
30100 3048
30100 3049
30200 2001
30200 2022
30200 2023
30200 2024
30200 2025
30200 2039

Last Mile Service Area Name: Rileyville
Community Name: **Other Area**
Rural Calssification of the Community: Rural
BIP – Service Status: Unserved

BIP - If Service Status is "Underserved" please select at least one applicable option from this list.

BTOP - Service Status: Unserved

BTOP - If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles of Service Area: 27

Scientific Collections where Salamander, Shenandoah (020045) observed

38,43,45.8 -78,25,17.9
is the Search Point

Show Position Rings
◉ Yes ○ No
4 miles and 1 mile at the Search Point

Show Search Area
◉ Yes ○ No
10 miles

Search Point is at map center

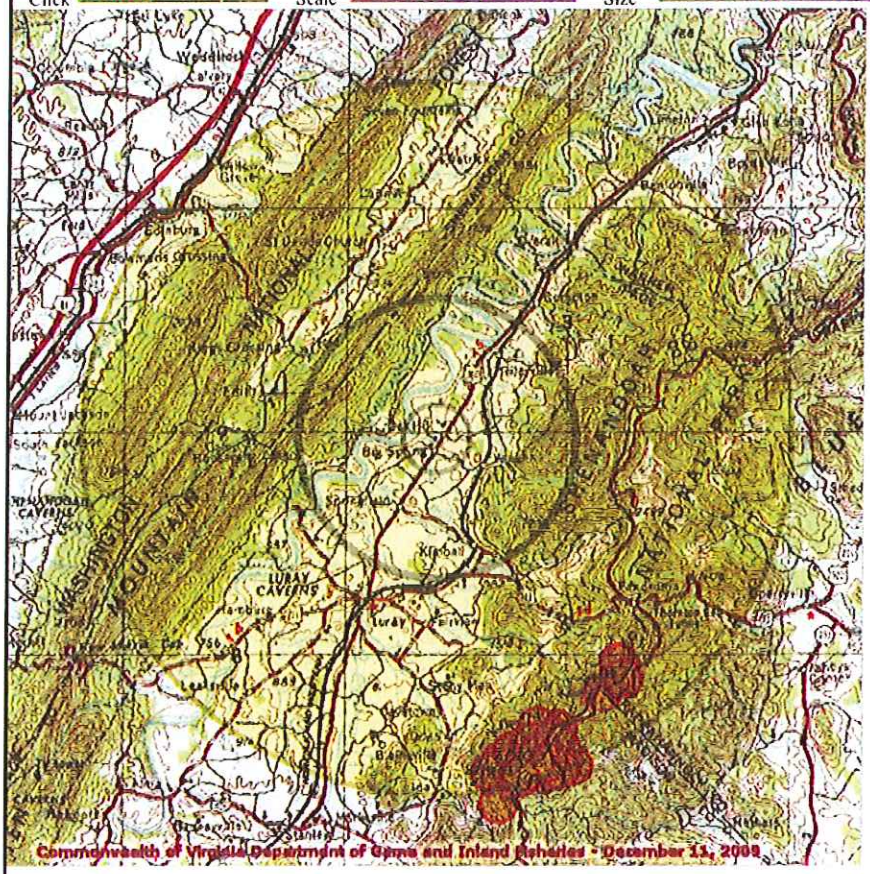
Base Map Choices
Topography

Map Overlay Choices
Current List: Search, Collections, Position

Map Overlay Legend

- Position Rings 4 miles and 1 mile at the Search Point
- 10 mile radius Search Area
- Data Collection Site

back | Map Click: Pan Id M | Map Scale: In Zoom Out | Refresh Browser Page | Screen Size: Small Size Big | Help



N

5 0 5 10 15 20 Kilometers
2.5 0 2.5 5 7.5 10 Miles

Point of Search 38,43,45.8 -78,25,17.9
Map Location 38,43,45.8 -78,25,17.9

Select **Coordinate System:**
◉ Degrees,Minutes,Seconds Latitude - Longitude
○ Decimal Degrees Latitude - Longitude
○ Meters UTM NAD83 East North Zone
○ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:250,000 topographic maps (see terraserver-usa.com for details)

Map projection is UTM Zone 17 NAD 1983 with left 704952 and top 4309118. Pixel size is 64 meters . Coordinates displayed are Degrees, Minutes, Seconds North and West.Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixles. The map display represents 38400 meters east to west by 38400 meters north to south for a total of 1474.5 square kilometers. The map display represents 126005 feet east to west by 126005 feet north to south for a total of 569.5 square miles.

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Threatened and Endangered Waters where Floater, brook (060006) observed

38,43,45.8 -78,25,17.9
is the Search Point

Show Position Rings
◉ Yes ○ No
4 miles and 1 mile at the Search Point

Show Search Area
◉ Yes ○ No
10 miles

Search Point is at map center

Base Map Choices
Topography

Map Overlay Choices
Current List: Search, TEWaters, Position

Map Overlay Legend

T & E Waters

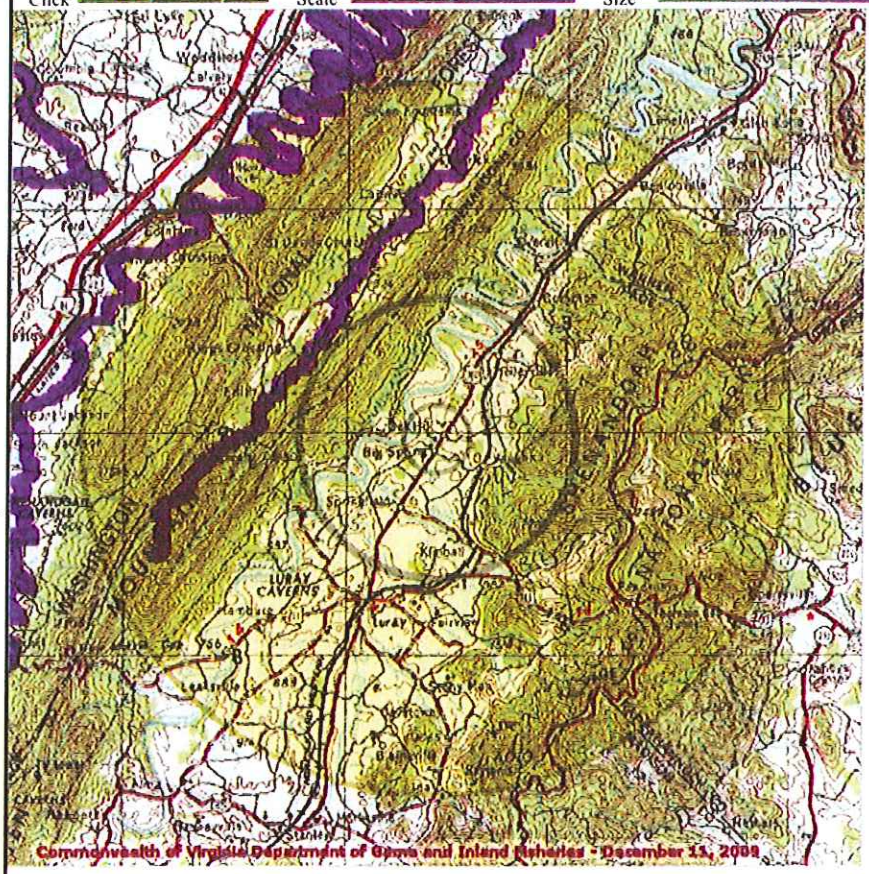
Federal

State

Position Rings 4 miles and 1 mile at the Search Point

10 mile radius Search Area

back | Map Click: Pan Id M | Map Scale: In Zoom Out | Refresh Browser Page | Screen Size: Small Size Big | Help



N

5 0 5 10 15 20 Kilometers
2.5 0 2.5 5 7.5 10 Miles

Point of Search 38,43,45.8 -78,25,17.9
Map Location 38,43,45.8 -78,25,17.9

Select **Coordinate System:**
◉ Degrees,Minutes,Seconds Latitude - Longitude
○ Decimal Degrees Latitude - Longitude
○ Meters UTM NAD83 East North Zone
○ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:250,000 topographic maps (see terraserver-usa.com for details)

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Threatened and Endangered Waters where Turtle, wood (030062) observed

38,43,45.8 -78,25,17.9
is the Search Point

Show Position Rings
(•) Yes ( ) No
4 miles and 1 mile at the Search Point

Show Search Area
(•) Yes ( ) No
10 miles

Search Point is at map center

Base Map Choices
Topography

Map Overlay Choices
Current List: Search, TEWaters, Position

Map Overlay Legend

T & E Waters

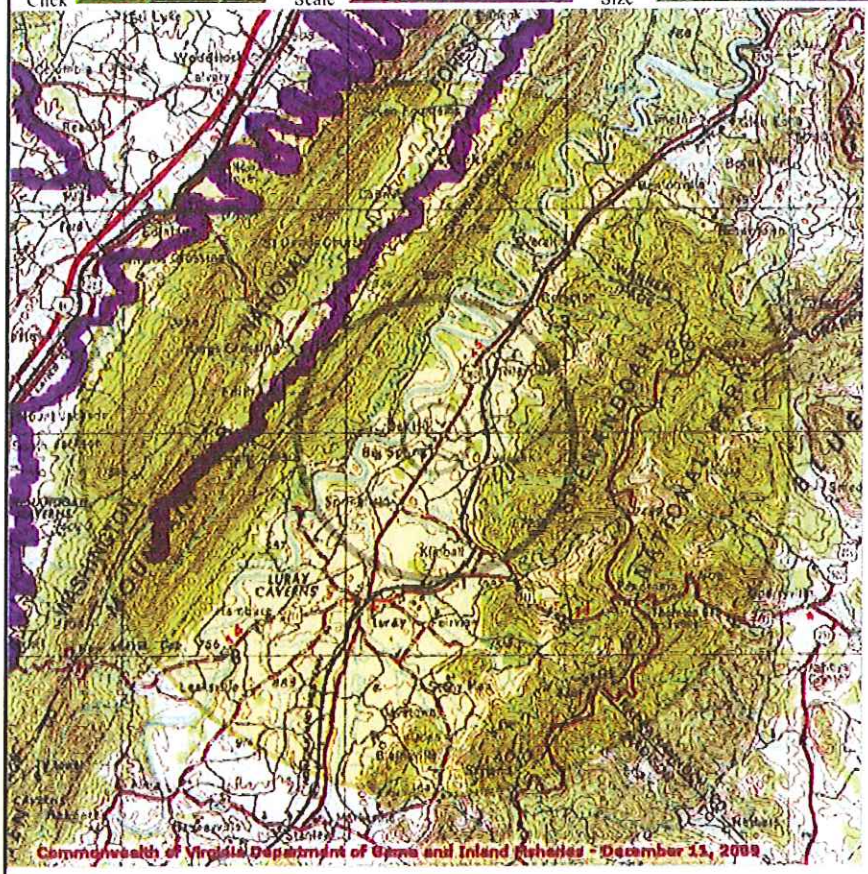
Federal

State

Position Rings 4 miles and 1 mile at the Search Point

10 mile radius Search Area

back | Map Click Pan Id M | Map Scale In Zoom Out | Refresh Browser Page | Screen Size Small Size Big | Help



N

5 0 5 10 15 20 Kilometers
2.5 0 2.5 5 7.5 10 Miles

Point of Search 38,43,45.8 -78,25,17.9
Map Location 38,43,45.8 -78,25,17.9

Select **Coordinate System:**
(•) Degrees,Minutes,Seconds Latitude - Longitude
( ) Decimal Degrees Latitude - Longitude
( ) Meters UTM NAD83 East North Zone
( ) Meters UTM NAD27 East North Zone

Base Map source: USGS 1:250,000 topographic maps (see terraserver-usa.com for details)

Map projection is UTM Zone 17 NAD 1983 with left 704952 and top 4309118. Pixel size is 64 meters . Coordinates displayed are Degrees, Minutes, Seconds North and West.Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixles. The map display represents 38400 meters east to west by 38400 meters north to south for a total of 1474.5 square kilometers. The map display represents 126005 feet east to west by 126005 feet north to south for a total of 569.5 square miles.

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Scientific Collections where Falcon, peregrine (040096) observed

38,43,45.8 -78,25,17.9
is the Search Point

Show Position Rings
◉ Yes ○ No
4 miles and 1 mile at the Search Point

Show Search Area
◉ Yes ○ No
10 miles

Search Point is at map center

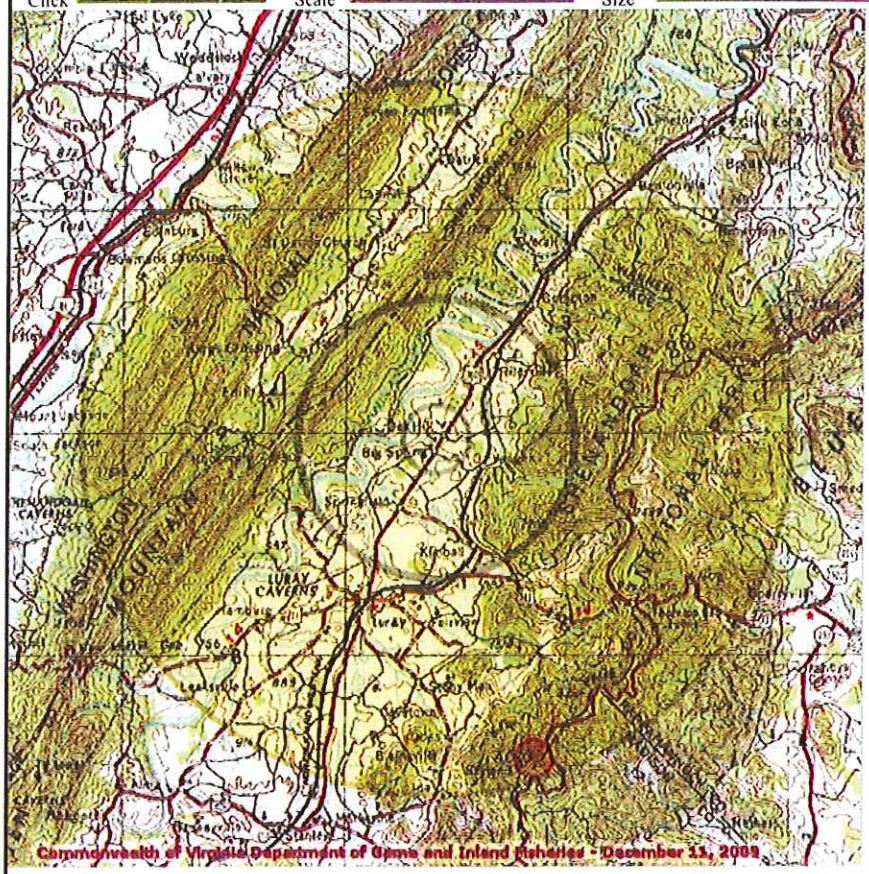
Base Map Choices
Topography

Map Overlay Choices
Current List: Search, Collections, Position

Map Overlay Legend

- Position Rings 4 miles and 1 mile at the Search Point
- 10 mile radius Search Area
- Data Collection Site

back | Map Click: Pan Id M | Map Scale: In Zoom Out | Refresh Browser Page | Screen Size: Small Size Big | Help



N

5 0 5 10 15 20 Kilometers
2.5 0 2.5 5 7.5 10 Miles

Point of Search 38,43,45.8 -78,25,17.9
Map Location 38,43,45.8 -78,25,17.9

Select **Coordinate System:**
◉ Degrees,Minutes,Seconds Latitude - Longitude
○ Decimal Degrees Latitude - Longitude
○ Meters UTM NAD83 East North Zone
○ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:250,000 topographic maps (see terraserver-usa.com for details)

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where Shrike, loggerhead (040293) observed

38,43,45.8 -78,25,17.9
is the Search Point

Show Position Rings
◉ Yes ○ No
4 miles and 1 mile at the Search Point

Show Search Area
◉ Yes ○ No
10 miles

Search Point is at map center

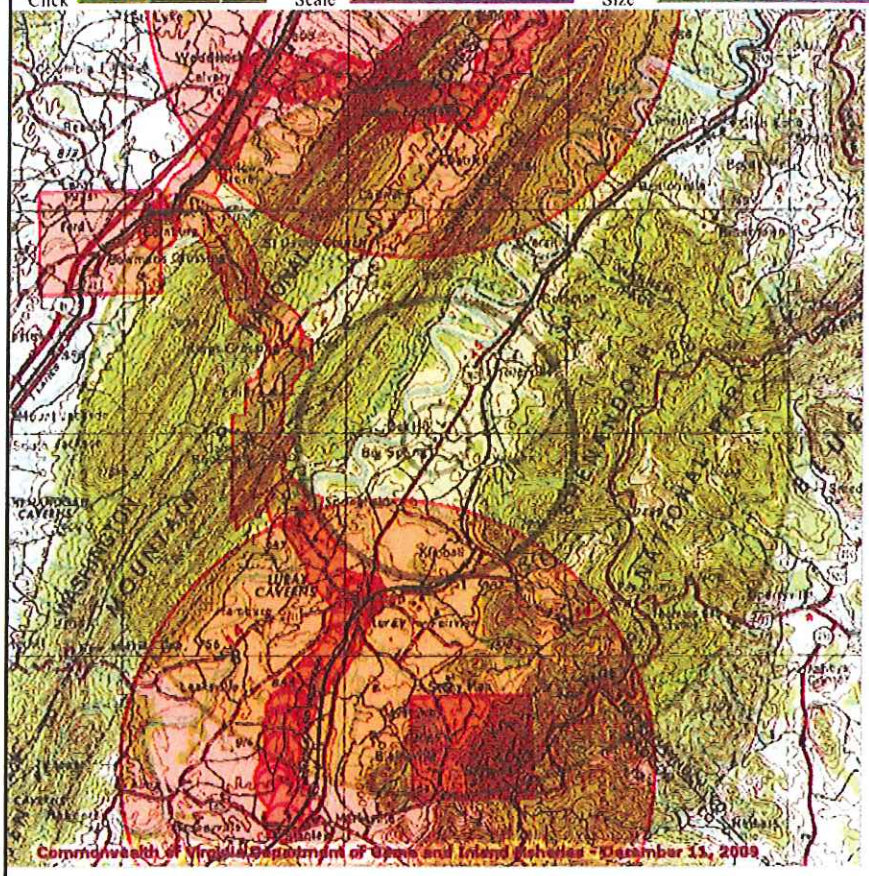
Base Map Choices
Topography

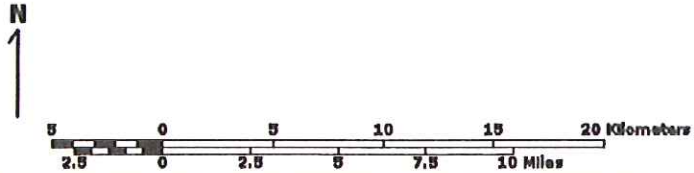
Map Overlay Choices
Current List: Search, BBA, BBS, CBC, Position

Map Overlay Legend

- Position Rings 4 miles and 1 mile at the Search Point
- 10 mile radius Search Area
- Data Collection Site

back | Map Click: Pan Id M | Map Scale: In Zoom Out | Refresh Browser Page | Screen Size: Small Size Big | Help





Point of Search 38,43,45.8 -78,25,17.9
Map Location 38,43,45.8 -78,25,17.9

Select **Coordinate System:**
- ◉ Degrees,Minutes,Seconds Latitude - Longitude
- ○ Decimal Degrees Latitude - Longitude
- ○ Meters UTM NAD83 East North Zone
- ○ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:250,000 topographic maps (see terraserver-usa.com for details)

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where Eagle, bald (040093) observed

38,43,45.8 -78,25,17.9
is the Search Point

Show Position Rings
(•) Yes ( ) No
4 miles and 1 mile at the Search Point

Show Search Area
(•) Yes ( ) No
10 miles

Search Point is at map center

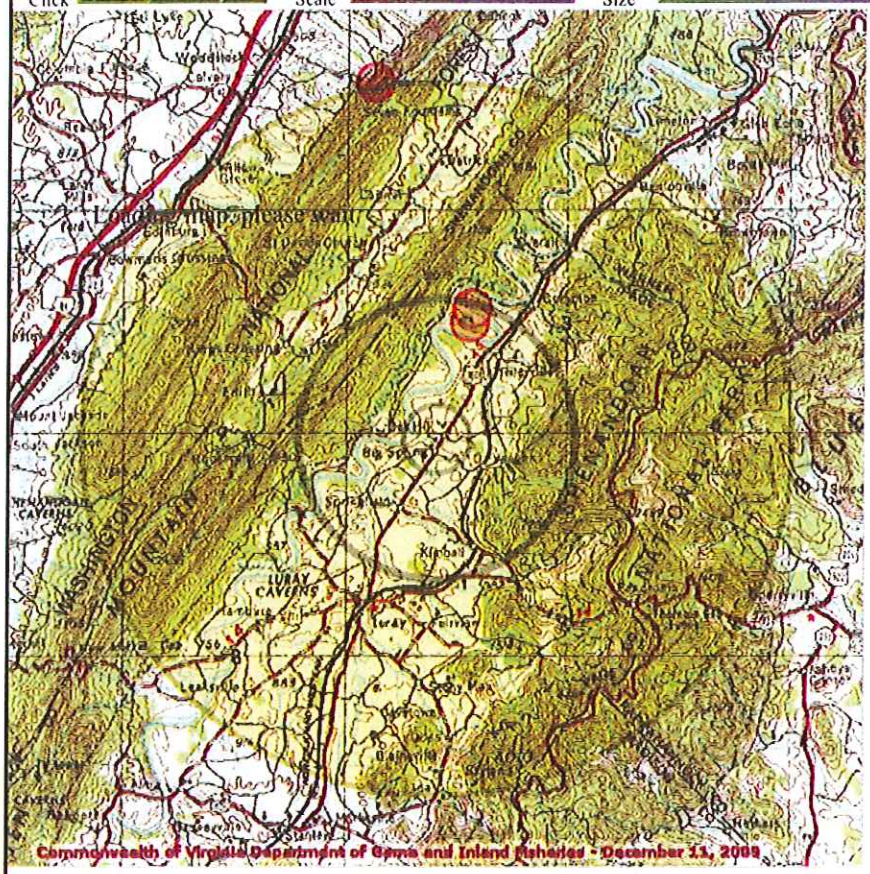
Base Map Choices
Topography

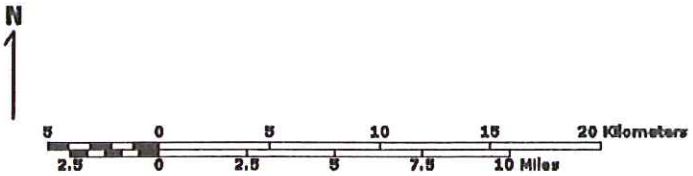
Map Overlay Choices
Current List: Search, Collections, ObsBook, Position

Map Overlay Legend

- Position Rings 4 miles and 1 mile at the Search Point
- 10 mile radius Search Area
- Data Collection Site

back | Map Click: Pan | Id | M | Map Scale: In Zoom Out | Refresh Browser Page | Screen Size: Small Size Big | Help





Point of Search 38,43,45.8 -78,25,17.9
Map Location 38,43,45.8 -78,25,17.9

Select **Coordinate System:**
(•) Degrees,Minutes,Seconds Latitude - Longitude
( ) Decimal Degrees Latitude - Longitude
( ) Meters UTM NAD83 East North Zone
( ) Meters UTM NAD27 East North Zone

Base Map source: USGS 1:250,000 topographic maps (see terraserver-usa.com for details)

Map projection is UTM Zone 17 NAD 1983 with left 704952 and top 4309118. Pixel size is 64 meters . Coordinates displayed are Degrees, Minutes, Seconds North and West.Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixles. The map display represents 38400 meters east to west by 38400 meters north to south for a total of 1474.5 square kilometers. The map display represents 126005 feet east to west by 126005 feet north to south for a total of 569.5 square miles.

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Threatened and Endangered Waters where Floater, green (060081) observed

38,43,45.8 -78,25,17.9
is the Search Point

Show Position Rings
◉ Yes ○ No
4 miles and 1 mile at the Search Point

Show Search Area
◉ Yes ○ No
10 miles

Search Point is at map center

Base Map Choices
Topography

Map Overlay Choices
Current List: Search, TEWaters, Position

Map Overlay Legend

T & E Waters

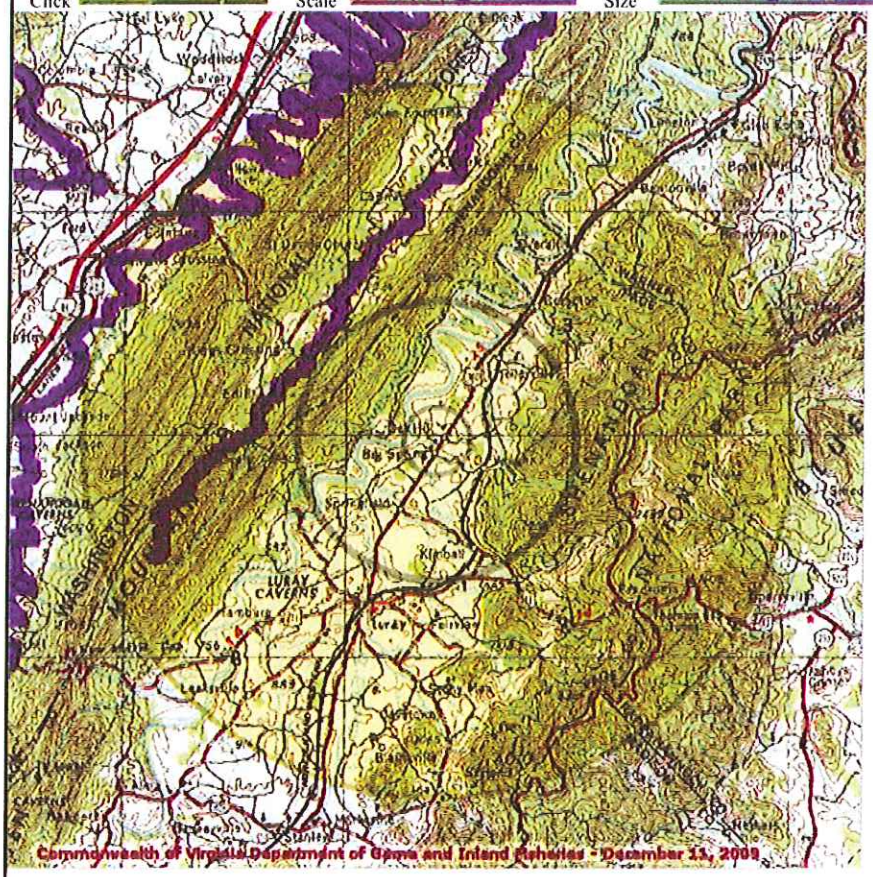
Federal

State

Position Rings 4 miles and 1 mile at the Search Point

10 mile radius Search Area

back | Map Click Pan 1d M | Map Scale In Zoom Out | [Refresh Browser Page] | Screen Size Small Size Big | [Help]



N

5 0 5 10 15 20 Kilometers
2.5 0 2.5 5 7.5 10 Miles

Point of Search 38,43,45.8 -78,25,17.9
Map Location 38,43,45.8 -78,25,17.9

Select **Coordinate System:**
◉ Degrees,Minutes,Seconds Latitude - Longitude
○ Decimal Degrees Latitude - Longitude
○ Meters UTM NAD83 East North Zone
○ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:250,000 topographic maps (see terraserver-usa.com for details)

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Scientific Collections where Fritillary, regal (100248) observed

38,43,45.9 -78,25,18.0
is the Search Point

Show Position Rings
◉ Yes ○ No
4 miles and 1 mile at the Search Point

Show Search Area
◉ Yes ○ No
10 miles

Search Point is at map center

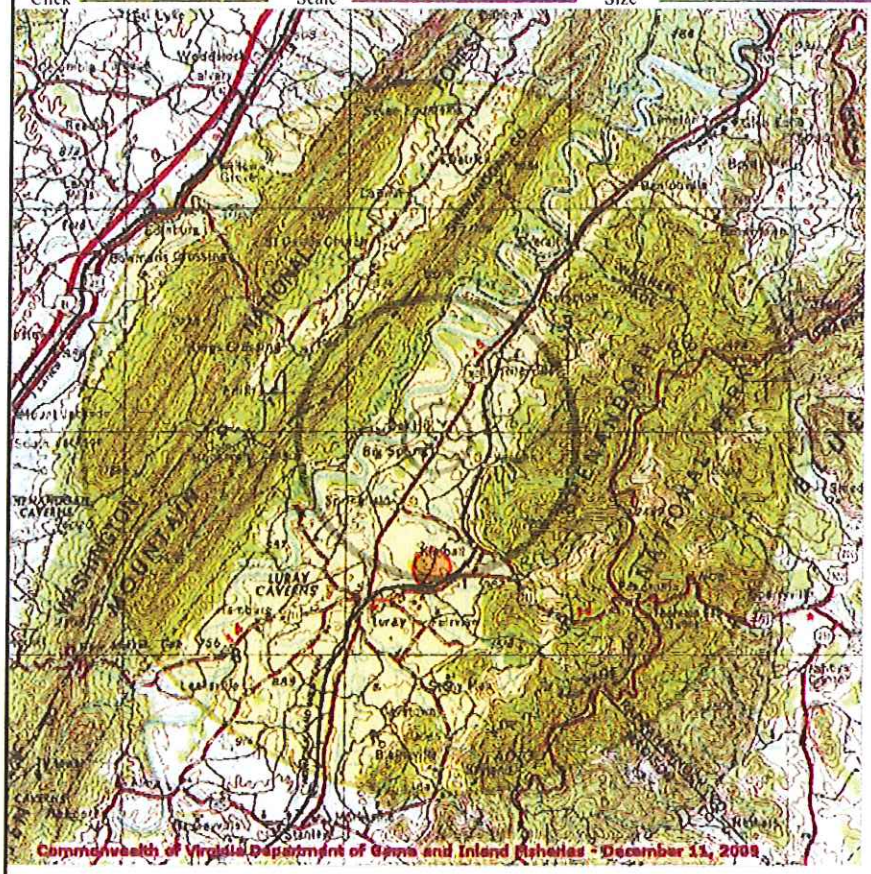
Base Map Choices
Topography

Map Overlay Choices
Current List: Search, Collections, Position

Map Overlay Legend

- Position Rings 4 miles and 1 mile at the Search Point
- 10 mile radius Search Area
- Data Collection Site

back | Map Click: Pan | Id | M | Map Scale: In Zoom Out | [Refresh Browser Page] | Screen Size: Small Size Big | [Help]



N

5 0 5 10 15 20 Kilometers
2.5 0 2.5 5 7.5 10 Miles

Point of Search 38,43,45.9 -78,25,18.0
Map Location 38,43,45.9 -78,25,18.0

Select **Coordinate System:**
◉ Degrees,Minutes,Seconds Latitude - Longitude
○ Decimal Degrees Latitude - Longitude
○ Meters UTM NAD83 East North Zone
○ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:250,000 topographic maps (see terraserver-usa.com for details)

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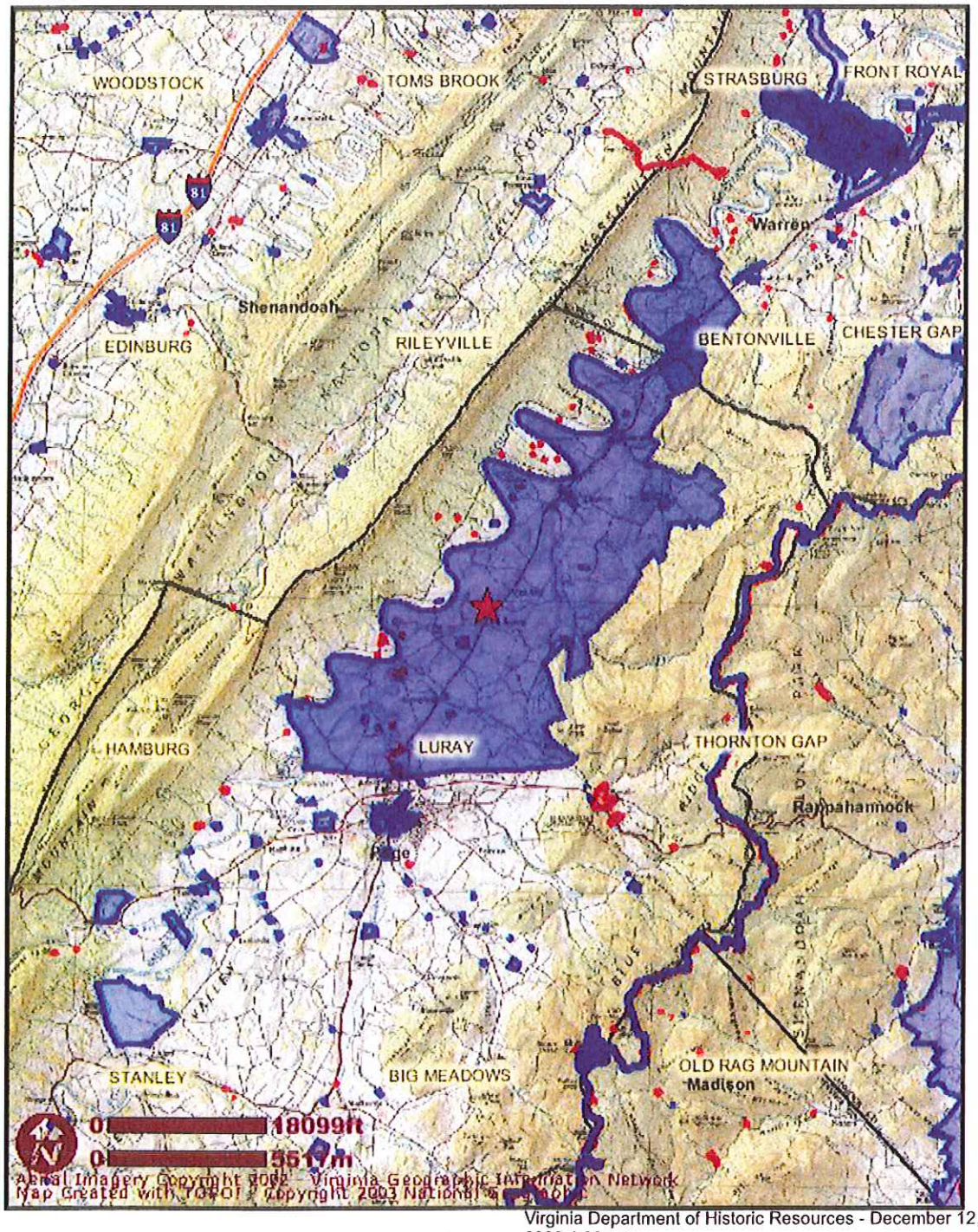
Virginia Department of Historic Resources Data Sharing System, 12/11/2009

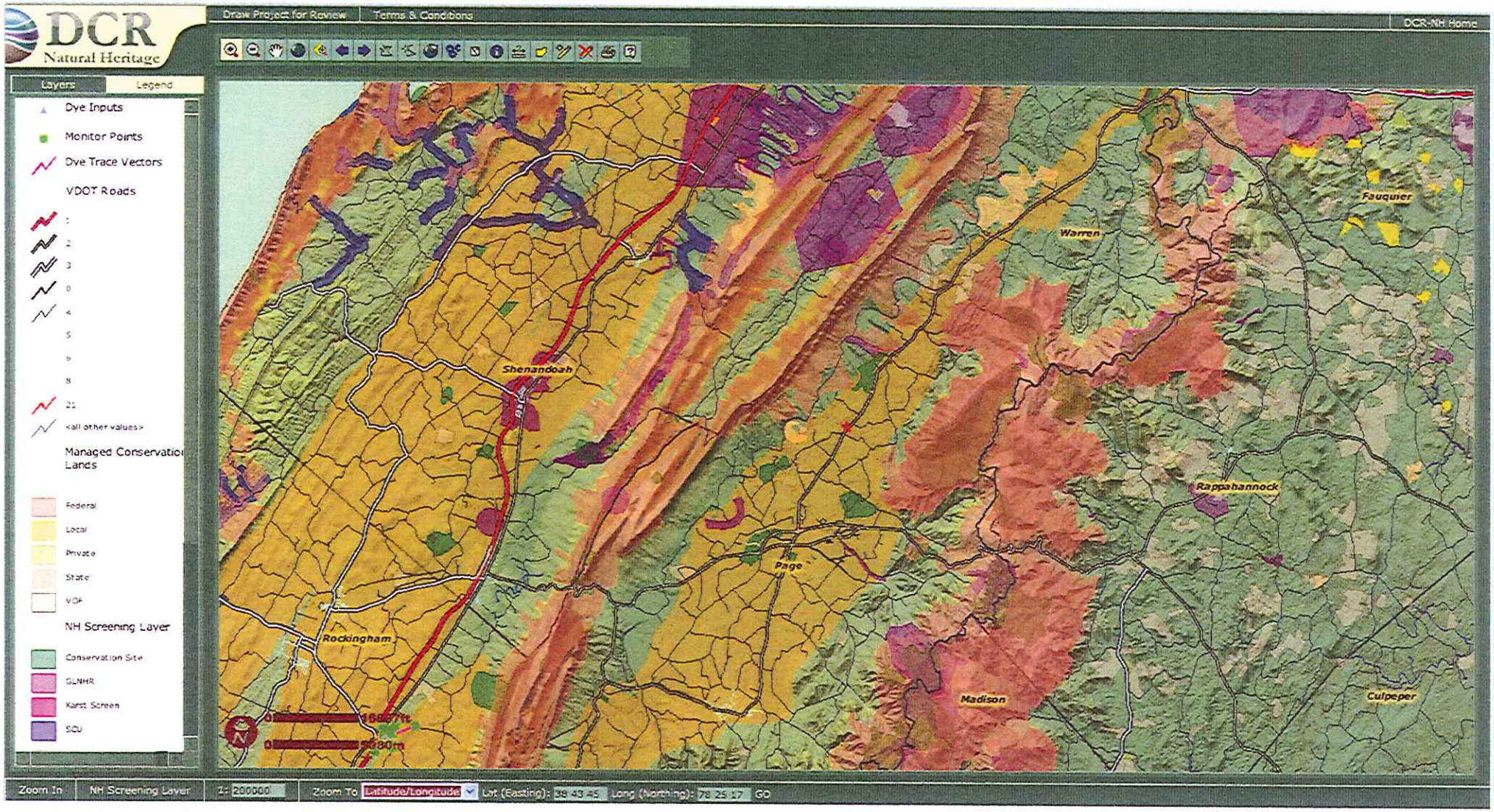


LEGEND
County Labels
USGS Quad Grid Labels
Interstates
Architecture (polygon)
Archaeology (polygon)
County Boundary
States
Virginia
<all other values>
100k TOPO
Elevation

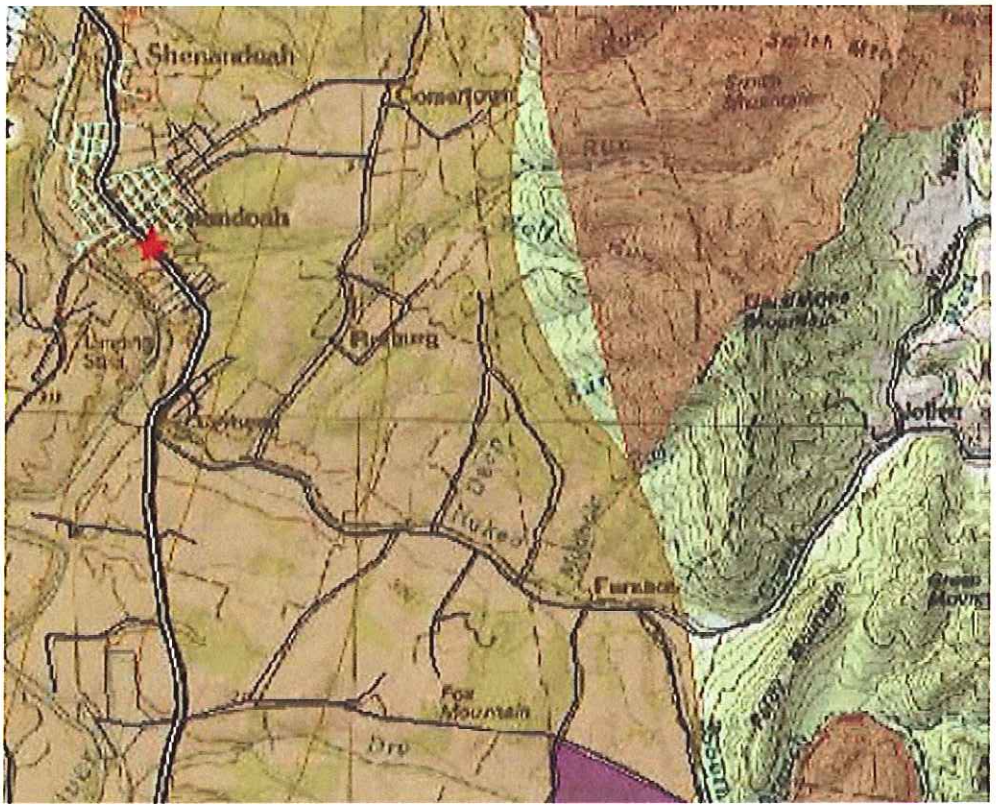
Virginia Department of Historic Resources - December 12, 2009 1:30 pm

Page Count Buffer 0

1:100,000 scale


DCR
Natural Heritage
Draw Project for Review
Terms & Conditions
DCR-NH Home
Layers
Legend
Dye Inputs
Monitor Points
Dye Trace Vectors
VDOT Roads
1
2
3
0
4
5
6
8
21
<all other values>
Managed Conservation Lands
Federal
Local
Private
State
VDF
NH Screening Layer
Conservation Site
GLNHR
Karst Screen
SCU
Shenandoah
Rockingham
Page
Warren
Fauquier
Rappahannock
Madison
Culpeper
Zoom In
NH Screening Layer
1: 200000
Zoom To
Latitude/Longitude
Lat (Easting): 38 43 45
Long (Northing): 78 25 17
GO

SITE DATABASE RECORDS REPORT



Page Buffer 1

Page County, Virginia

78° 37' 2.675 W, 38° 28' 57.44 N

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(757) 455-5800 Fax (757) 455-5638
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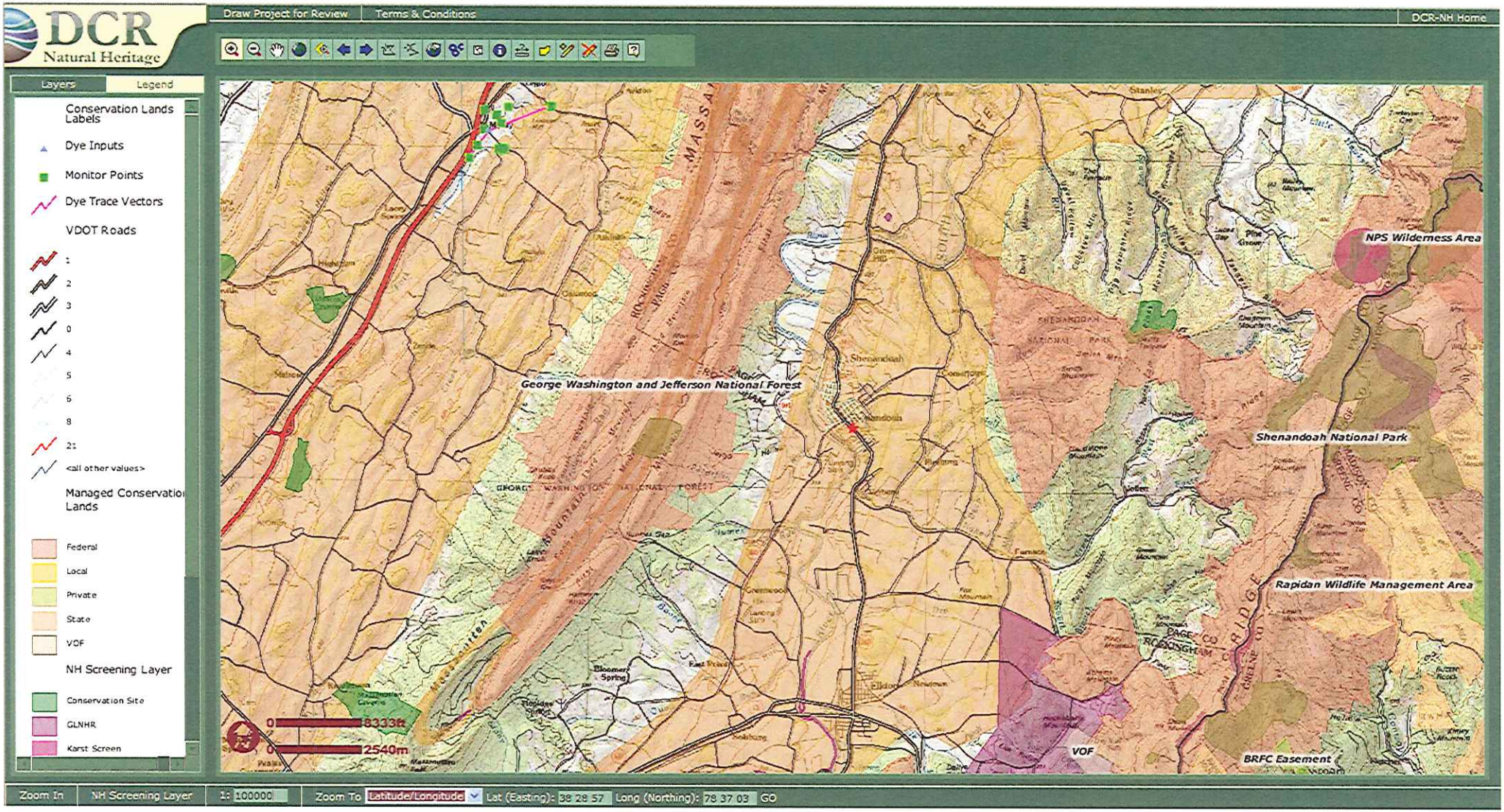
DCR
Natural Heritage
Draw Project for Review
Terms & Conditions
DCR-NH Home
Layers
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Monitor Points
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Managed Conservation Lands
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State
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NH Screening Layer
Conservation Site
GLNHR
Karst Screen
George Washington and Jefferson National Forest
NPS Wilderness Area
Shenandoah National Park
Rapidan Wildlife Management Area
VOF
BRFC Easement
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8333ft
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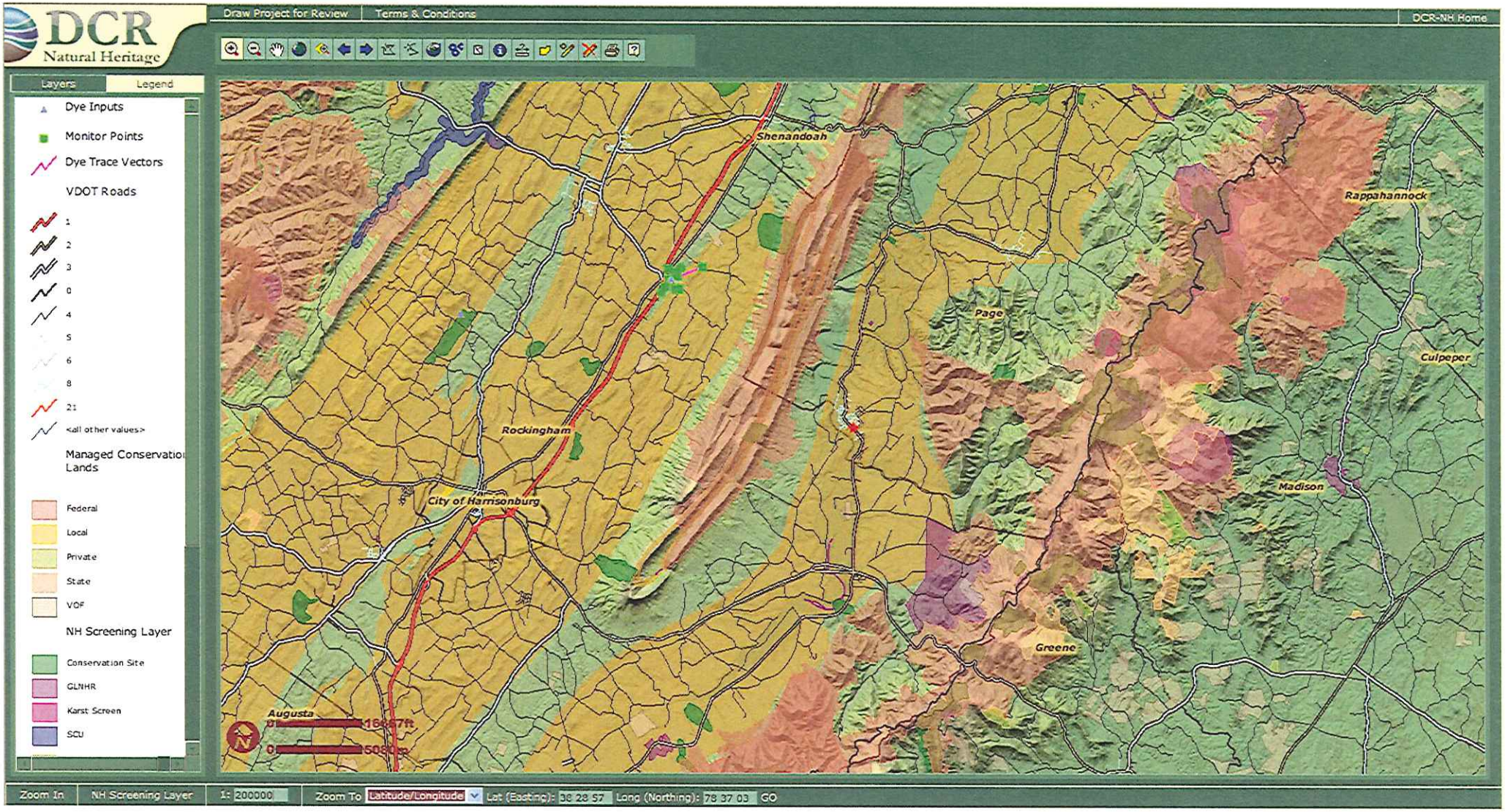
2540m
Zoom In
NH Screening Layer
1: 100000
Zoom To
Latitude/Longitude
Lat (Easting): 38 28 57
Long (Northing): 78 37 03
GO


DCR
Natural Heritage
Draw Project for Review
Terms & Conditions
DCR-NH Home
Layers
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Dye Inputs
Monitor Points
Dye Trace Vectors
VDOT Roads
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Managed Conservation Lands
Federal
Local
Private
State
VOF
NH Screening Layer
Conservation Site
GLNHR
Karst Screen
SCU
Shenandoah
Rappahannock
Page
Culpeper
Rockingham
City of Harrisonburg
Madison
Greene
Augusta
Zoom In
NH Screening Layer
1: 200000
Zoom To
Latitude/Longitude
Lat (Easting): 38 28 57
Long (Northing): 78 37 03
GO

Virginia Department of Game and Inland Fisheries

12/11/2009 2:31:27 PM

Fish and Wildlife Information Service

VaFWIS Initial Project Assessment Report Compiled on 12/11/2009, 2:31:27 PM

Help

Known or likely to occur within a **10 mile radius of 38,28,57.0 78,37,03.0** in **079 Greene County, 113 Madison County, 139 Page County, 165 Rockingham County, 171 Shenandoah County, VA**

571 Known or Likely Species ordered by Status Concern for Conservation (displaying first 41) (41 species with Status* or Tier I**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
020045	FESE	I	Salamander, Shenandoah	Plethodon shenandoah		BOVA
050023	FESE	I	Bat, Indiana	Myotis sodalis		BOVA
050035	FESE	II	Bat, Virginia big -eared	Corynorhinus townsendii virginianus		BOVA
200010	FEST		Rock-cress, shale barren	Arabis serotina	Yes	Collections
050009	SE	II	Shrew, American water	Sorex palustris		BOVA
060006	SE	II	Floater, brook	Alasmidonta varicosa	Yes	Collections,TEWaters,BOVA
030062	ST	I	Turtle, wood	Glyptemys insculpta		BOVA
040096	ST	I	Falcon, peregrine	Falco peregrinus	Yes	BBS,BOVA
040129	ST	I	Sandpiper, upland	Bartramia longicauda		BOVA
040293	ST	I	Shrike, loggerhead	Lanius ludovicianus	Yes	Collections,BBA,BBS,CBC,BOVA
040093	FSST	II	Eagle, bald	Haliaeetus leucocephalus	Yes	BBA,BOVA
060081	ST	II	Floater, green	Lasmigona subviridis		BOVA
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans		BOVA
100248	FS	I	Fritillary, regal	Speyeria idalia idalia		BOVA

060050	FSSS	II	Pigtoe, Tennessee	Fusconaia barnesiana		BOVA
040372	SS	I	Crossbill, red	Loxia curvirostra	Yes	CBC,BOVA
040306	SS	I	Warbler, golden-winged	Vermivora chrysoptera	Yes	Collections,BBA,BOVA
020027	SS	II	Salamander, Cow Knob	Plethodon punctatus		BOVA
040213	SS	II	Owl, northern saw-whet	Aegolius acadicus	Yes	CBC,BOVA
040266	SS	II	Wren, winter	Troglodytes troglodytes	Yes	Collections,BBA,BBS,CBC,BOVA
030063	CC	III	Turtle, spotted	Clemmys guttata	Yes	Collections,BOVA
040094	SS	III	Harrier, northern	Circus cyaneus	Yes	CBC,BOVA
040036	SS	III	Night-heron, yellow-crowned	Nyctanassa violacea violacea		BOVA
040204	SS	III	Owl, barn	Tyto alba pratincola	Yes	BBA,CBC,BOVA
030012	CC	IV	Rattlesnake, timber	Crotalus horridus	Yes	Collections,ObsBook,BOVA
040264	SS	IV	Creeper, brown	Certhia americana	Yes	BBA,CBC,BOVA
040364	SS		Dickcissel	Spiza americana	Yes	BBA,BOVA
040032	SS		Egret, great	Ardea alba egretta		BOVA
040366	SS		Finch, purple	Carpodacus purpureus	Yes	CBC,BOVA
040241	SS		Flycatcher, alder	Empidonax alnorum		BOVA
040285	SS		Kinglet, golden-crowned	Regulus satrapa	Yes	Collections,CBC,BOVA
040112	SS		Moorhen, common	Gallinula chloropus cachinnans		BOVA
040262	SS		Nuthatch, red-breasted	Sitta canadensis	Yes	CBC,BOVA

040210	SS		Owl, long-eared	Asio otus	Yes	CBC
040189	SS		Tern, Caspian	Sterna caspia		BOVA
040278	SS		Thrush, hermit	Catharus guttatus	Yes	CBC,BOVA
040314	SS		Warbler, magnolia	Dendroica magnolia	Yes	Collections,BOVA
050110	SS		Mole, star-nosed	Condylura cristata parva		BOVA
050045	SS		Otter, northern river	Lontra canadensis lataxina		BOVA
040225		I	Sapsucker, yellow-bellied	Sphyrapicus varius	Yes	CBC,BOVA
040319		I	Warbler, black-throated green	Dendroica virens	Yes	BBA,BBS,BOVA

To view **All 571 species** View 571

* FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; FS=Federal Species of Concern; SC=State Candidate; CC=Collection Concern; SS=State Special Concern

** I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need

Anadromous Fish Use Streams

N/A

Colonial Water Bird Survey

N/A

Threatened and Endangered Waters (2 Reaches)

View Map of All Threatened and Endangered Waters

Stream Name	T&E Waters Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
Smith Creek (02070006)	SE	060006	SE	II	Floater, brook	Alasmidonta varicosa	Yes

Unnamed trib. of Smith Creek (02070006)	SE	060006	SE	II	Floater, brook	Alasmidonta varicosa	Yes

Cold Water Stream Survey (Trout Streams)
Managed Trout Species

(30 records - displaying first 20)
(Click on Stream Name to view complete reach history)

View Map of All
Cold Water Stream Surveys

Reach ID	Stream Name	Class	Brook Trout	Brown Trout	Rainbow Trout	View Map
07BIG-01	Big Creek	Wild trout	Y			Yes
07BLS-01	Bear Lithia Spring	Stockable				Yes
07BON-01	Boone Run	Wild trout	Y			Yes
07BON-01T	Boone Run	Wild trout				Yes
07BUG-01	Big Ugly Run	Wild trout	Y			Yes
07BWR-01	Browns Run	Wild trout	Y			Yes
07CUB-01	Cub Run	Wild trout	Y			Yes
07DRU-01	Dry Run	Wild trout	Y			Yes
07FUL-01	Fultz Run	Wild trout	Y			Yes
07HKL-01	Hawksbill Creek	Stockable				Yes
07LEE-01	Lee Run	Wild trout	Y			Yes
07MGN-01	Morgan Run	Wild trout	Y			Yes
07NKE-01	Naked Creek, EB	Wild trout	Y			Yes
07NKS-01	Naked Creek, SB	Wild trout	Y			Yes
07NKS-01T	Naked Creek, SB	Wild trout				Yes
07NKW-01	Naked Creek, WB	Wild trout	Y			Yes
07PSR-01	Pitt Spring Run	Wild trout	Y			Yes

VAFWIS Seach Report Page 5 of 5

07RNG-01	Roaring Creek	Wild trout	Y			Yes
07SMI-01	Smith Creek	Stockable				Yes
07SYR-01	Stony Run	Stockable				Yes

To view **All 30 Cold Water Stream Survey records** View 30

Public Holdings: (3 names)

Name	Agency	Level
Rapidan Wildlife Management Area		
Shenandoah National Park	National Park Service	Federal
George Washington National Forest	U.S. Forest Service	Federal

audit no. 271256 12/11/2009 2:31:28 PM Virginia Fish and Wildlife Information Service

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Scientific Collections where Rock-cress, shale barren (200010) observed

38,28,56.9 -78,37,03.0
is the Search Point

Show Position Rings
◉ Yes ○ No
4 miles and 1 mile at the Search Point

Show Search Area
◉ Yes ○ No
10 miles

Search Point is at map center

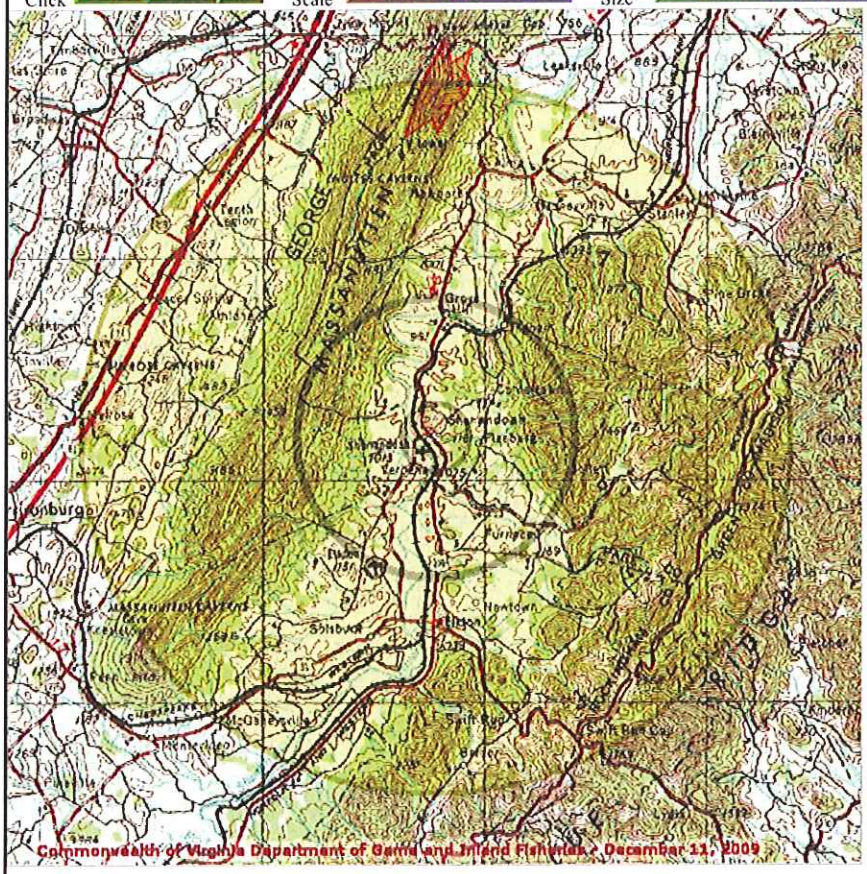
Base Map Choices
Topography

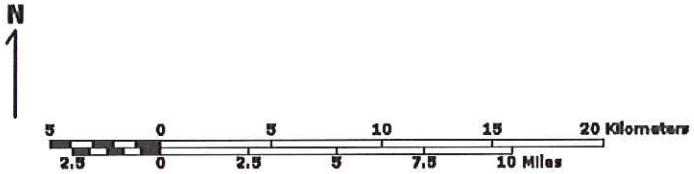
Map Overlay Choices
Current List: Search, Collections, Position

Map Overlay Legend

- Position Rings 4 miles and 1 mile at the Search Point
- 10 mile radius Search Area
- Data Collection Site

back | Map Click: Pan Id M | Map Scale: In Zoom Out | Screen Size: Small Size Big | [Refresh Browser Page] | Help





Point of Search 38,28,56.9 -78,37,03.0
Map Location 38,28,56.9 -78,37,03.0

Select **Coordinate System:**
◉ Degrees,Minutes,Seconds Latitude - Longitude
○ Decimal Degrees Latitude - Longitude
○ Meters UTM NAD83 East North Zone
○ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:250,000 topographic maps (see terraserver-usa.com for details)

Map projection is UTM Zone 17 NAD 1983 with left 688635 and top 4281253. Pixel size is 64 meters . Coordinates displayed are Degrees, Minutes, Seconds North and West.Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixles. The map display represents 38400 meters east to west by 38400 meters north to south for a total of 1474.5 square kilometers. The map display represents 126005 feet east to west by 126005 feet north to south for a total of 569.5 square miles.

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map assembled 2009-12-11 14:31:56 (qa/qc July 27, 2009 10:09 - tn=271256.2 dist=16093 1)

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Threatened and Endangered Waters where Floater, brook (060006) observed

38,28,56.9 -78,37,03.0
is the Search Point

Show Position Rings
◉ Yes ○ No
4 miles and 1 mile at the Search Point

Show Search Area
◉ Yes ○ No
10 miles

Search Point is at map center

Base Map Choices
Topography

Map Overlay Choices
Current List: Search, TEWaters, Position

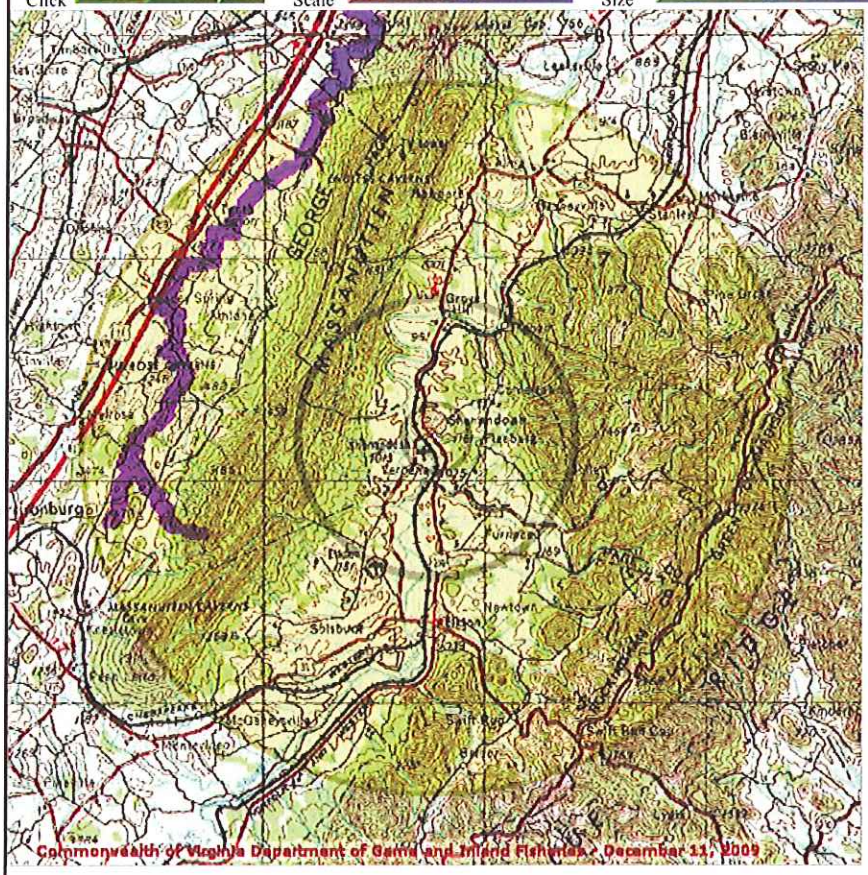
Map Overlay Legend

T & E Waters
Federal
State

Position Rings 4 miles and 1 mile at the Search Point

10 mile radius Search Area

back | Map Click: Pan Id M | [Refresh Browser Page] | Map Scale: In Zoom Out | Screen Size: Small Size Big | Help



N

5 0 5 10 15 20 Kilometers
2.5 0 2.5 5 7.5 10 Miles

Point of Search 38,28,56.9 -78,37,03.0
Map Location 38,28,56.9 -78,37,03.0

Select **Coordinate System:**
◉ Degrees,Minutes,Seconds Latitude - Longitude
○ Decimal Degrees Latitude - Longitude
○ Meters UTM NAD83 East North Zone
○ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:250,000 topographic maps (see terraserver-usa.com for details)

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USFWS Breeding Bird Survey Routes where Falcon, peregrine (040096) observed

38,28,56.9 -78,37,03.0
is the Search Point

Show Position Rings
◉ Yes ○ No
4 miles and 1 mile at the Search Point

Show Search Area
◉ Yes ○ No
10 miles

Search Point is at map center

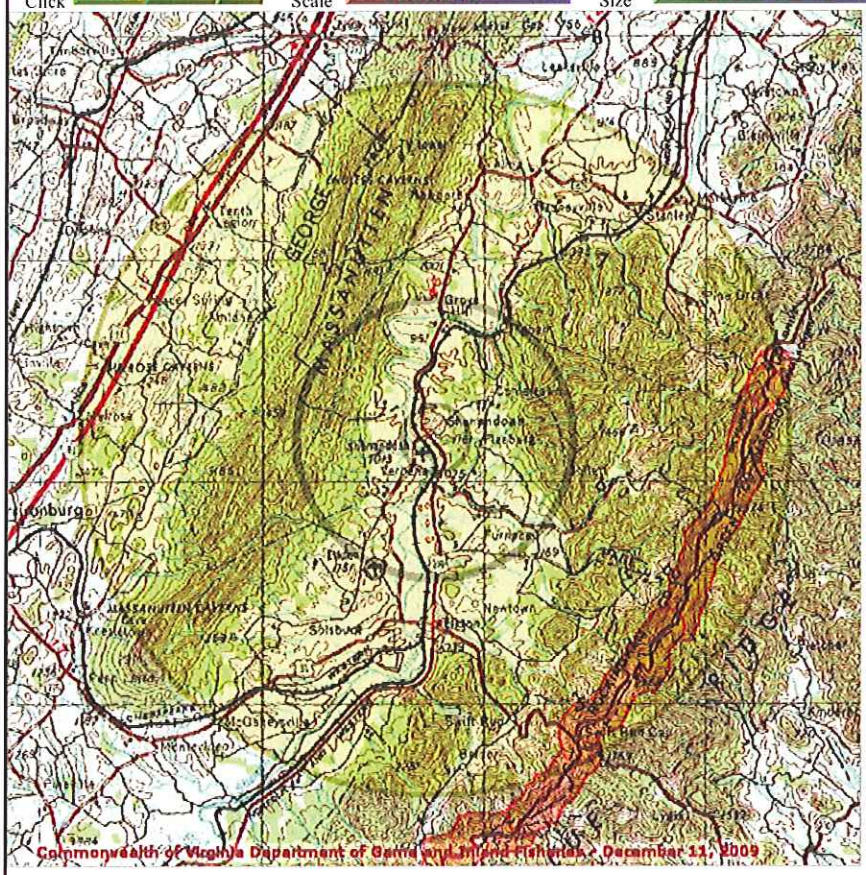
Base Map Choices
Topography

Map Overlay Choices
Current List: Search, BBS, Position

Map Overlay Legend

- Position Rings 4 miles and 1 mile at the Search Point
- 10 mile radius Search Area
- Data Collection Site

back | Map Click: Pan Id M | Map Scale: In Zoom Out | [Refresh Browser Page] | Screen Size: Small Size Big | Help



N

5 0 5 10 15 20 Kilometers
2.5 0 2.5 5 7.5 10 Miles

Point of Search 38,28,56.9 -78,37,03.0
Map Location 38,28,56.9 -78,37,03.0

Select **Coordinate System:**
◉ Degrees,Minutes,Seconds Latitude - Longitude
○ Decimal Degrees Latitude - Longitude
○ Meters UTM NAD83 East North Zone
○ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:250,000 topographic maps (see terraserver-usa.com for details)

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where Shrike, loggerhead (040293) observed

38,28,56.9 -78,37,03.0
is the Search Point

Show Position Rings
◉ Yes ○ No
4 miles and 1 mile at the Search Point

Show Search Area
◉ Yes ○ No
10 miles

Search Point is at map center

Base Map Choices
Topography

Map Overlay Choices
Current List: Search, BBA, BBS, CBC, Collections, Position

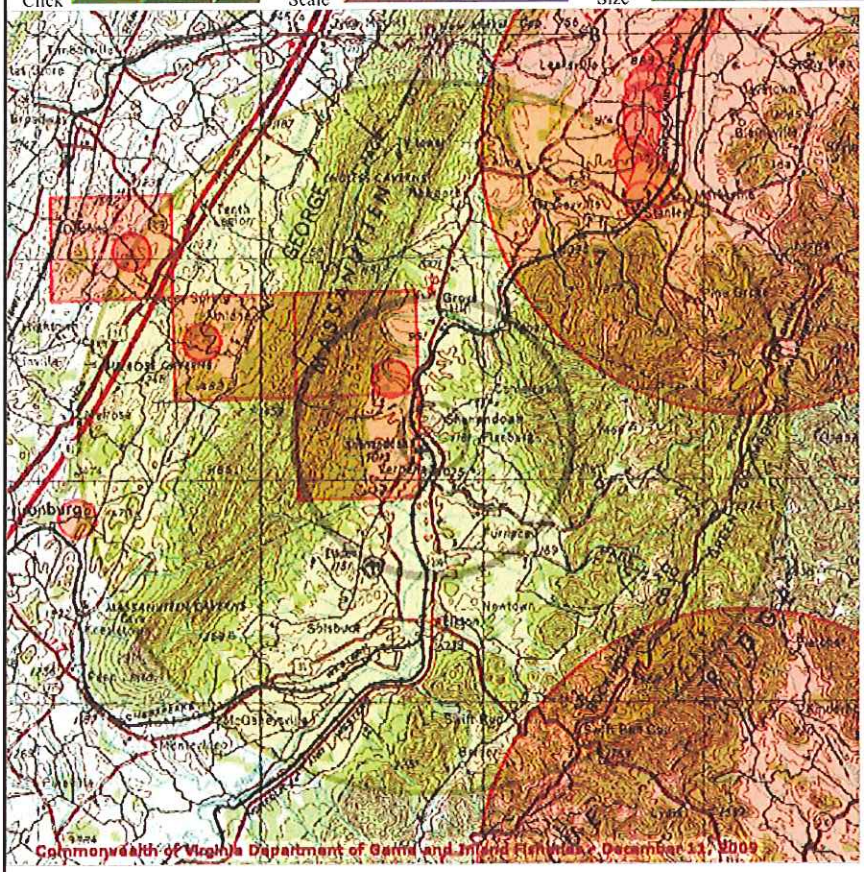
Map Overlay Legend

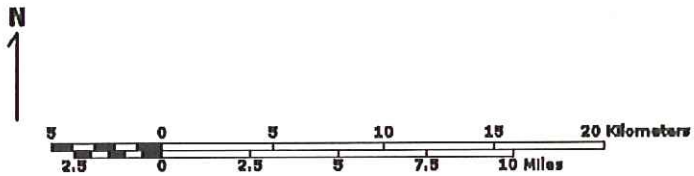
Position Rings 4 miles and 1 mile at the Search Point

10 mile radius Search Area

Data Collection Site

back | Map Click Pan Id M | Map Scale In Zoom Out | [Refresh Browser Page] | Screen Size Small Size Big | Help





Point of Search 38,28,56.9 -78,37,03.0
Map Location 38,28,56.9 -78,37,03.0

Select **Coordinate System:**
◉ Degrees,Minutes,Seconds Latitude - Longitude
○ Decimal Degrees Latitude - Longitude
○ Meters UTM NAD83 East North Zone
○ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:250,000 topographic maps (see terraserver-usa.com for details)

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Virginia Breeding Bird Atlas Blocks where Eagle, bald (040093) observed

38,28,56.9 -78,37,03.0
is the Search Point

Show Position Rings
◉ Yes ○ No
4 miles and 1 mile at the Search Point

Show Search Area
◉ Yes ○ No
10 miles

Search Point is at map center

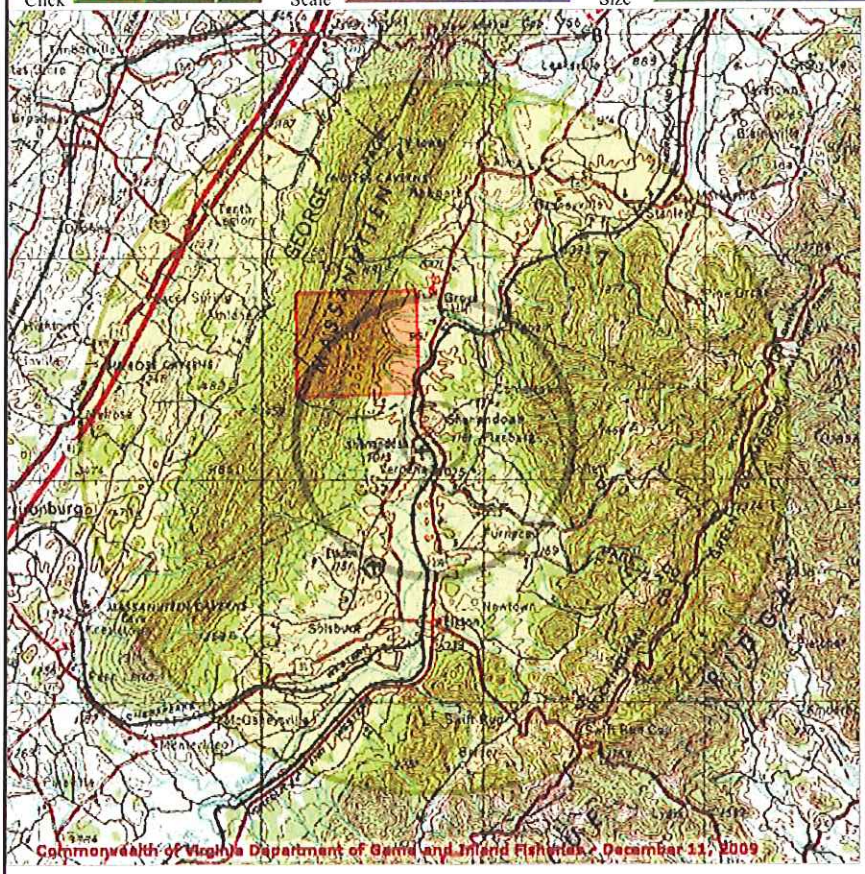
Base Map Choices
Topography

Map Overlay Choices
Current List: Search, BBA, Position

Map Overlay Legend

- Position Rings 4 miles and 1 mile at the Search Point
- 10 mile radius Search Area
- Data Collection Site

back | Map Click: Pan Id M | Map Scale: In Zoom Out | [Refresh Browser Page] | Screen Size: Small Size Big | Help



N

5 0 5 10 15 20 Kilometers
2.5 0 2.5 5 7.5 10 Miles

Point of Search 38,28,56.9 -78,37,03.0
Map Location 38,28,56.9 -78,37,03.0

Select Coordinate System:
◉ Degrees,Minutes,Seconds Latitude - Longitude
○ Decimal Degrees Latitude - Longitude
○ Meters UTM NAD83 East North Zone
○ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:250,000 topographic maps (see terraserver-usa.com for details)

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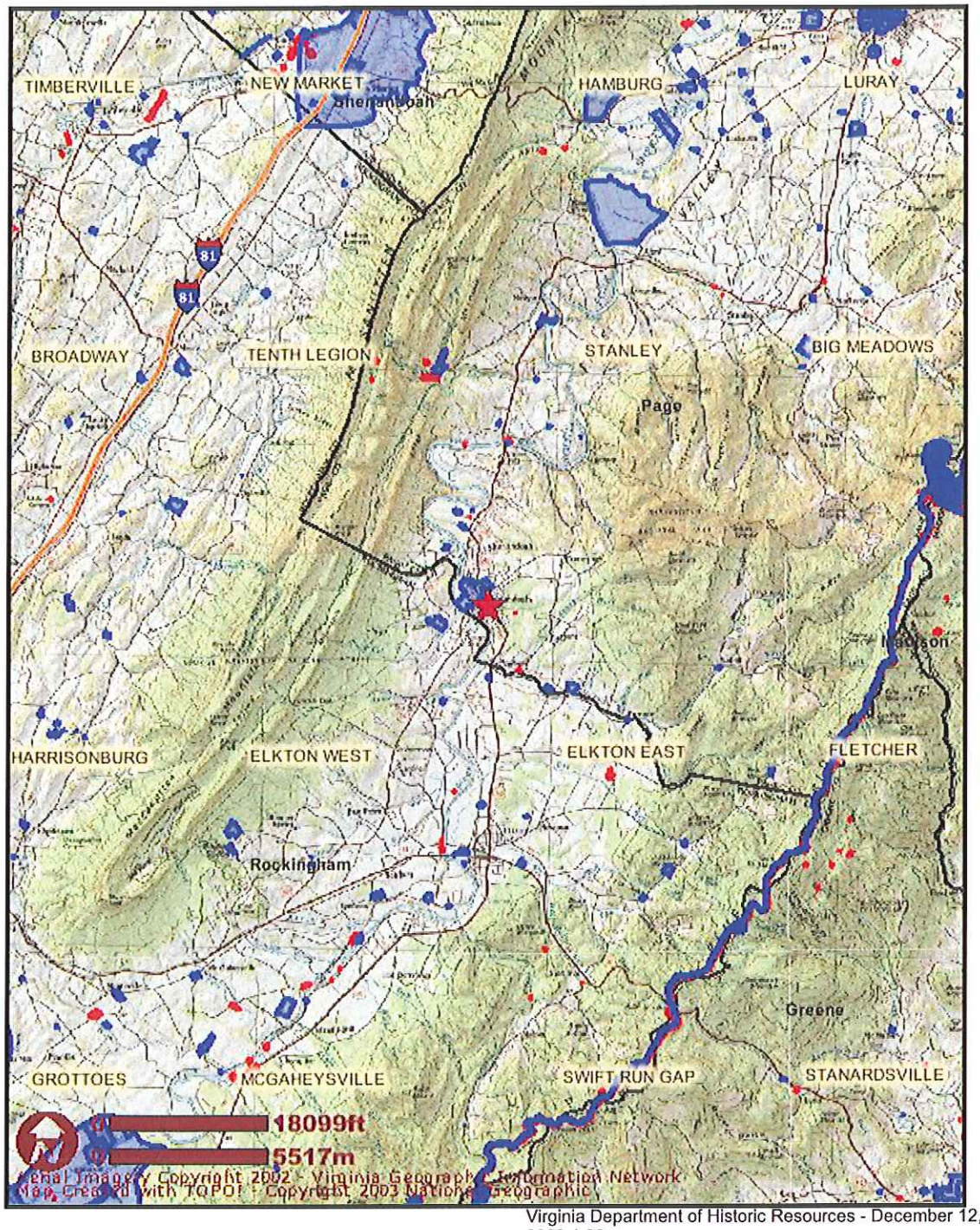
Virginia Department of Historic Resources Data Sharing System, 12/11/2009



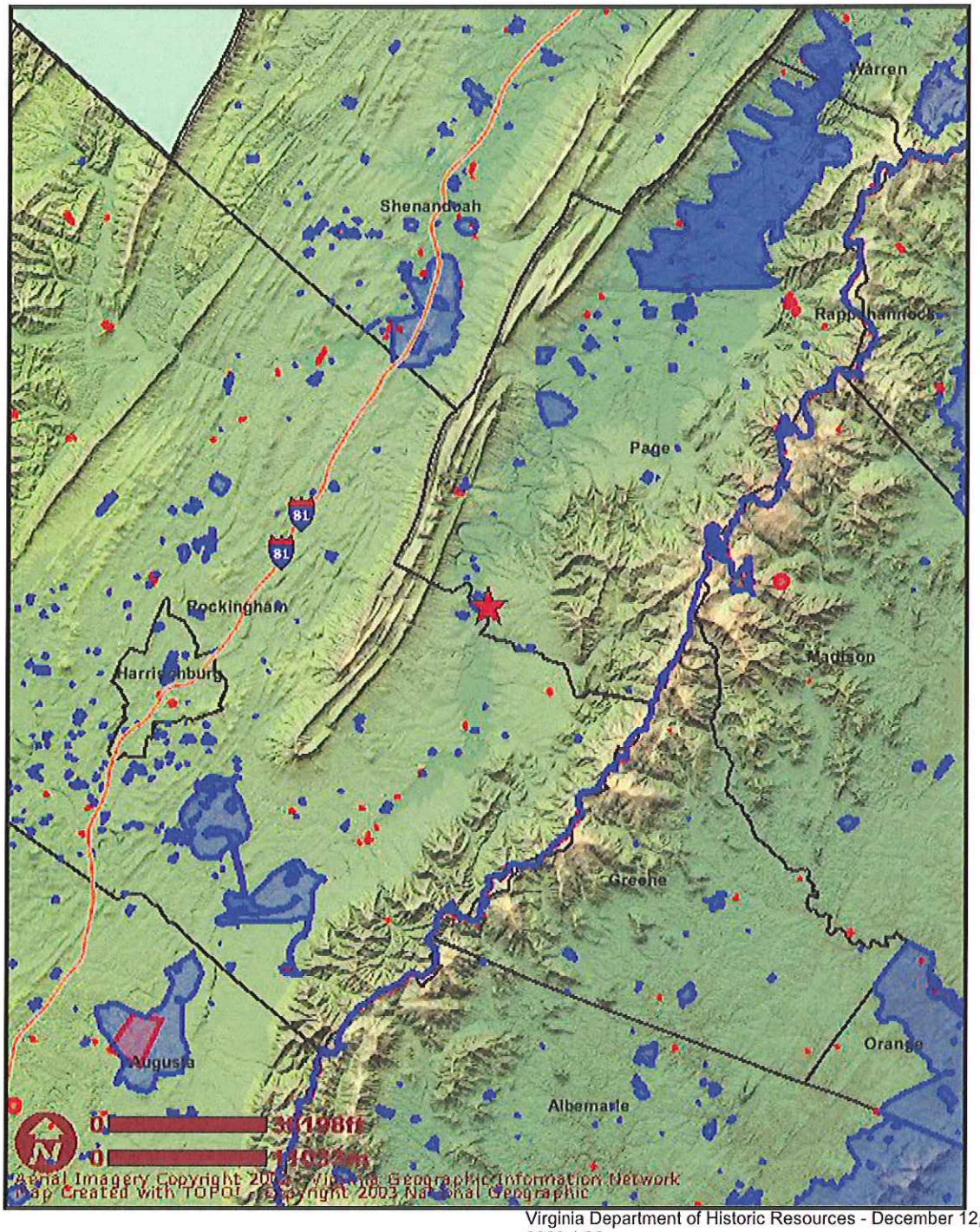
LEGEND
County Labels
USGS Quad Grid Labels
Interstates
Architecture (polygon)
Archaeology (polygon)
County Boundary
States
Virginia
<all other values>
100k TOPO
Elevation

Virginia Department of Historic Resources - December 12, 2009 1:30 pm

Page County Buffer 1

1:100,000 scale

Virginia Department of Historic Resources Data Sharing System, 12/11/2009



LEGEND
County Labels
Interstates
Architecture (polygon)
Archaeology (polygon)
County Boundary
States
Virginia
<all other values>
Elevation

Virginia Department of Historic Resources - December 12, 2009 1:30 pm

Page County Buffer 1

1:200,000 scale

Submitted Date: 8/17/2009 8:17:11 PM	**Easygrants ID: 1410**
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Page County Broadband Authority
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Tom M Cardman

Total Population : 1,766
Total Number of Households: 690
Total Number of Businesses: 21
Total Number of Critical Community Facilities, Anchor Institutions and Public Safety Entities: 4

Middle Mile Span Name: Town of Luray

Census Blocks in Middle Mile Span:

TRACT	BLOCK
30100	1007
30100	1009
30100	1011
30100	1012
30100	1017
30100	1018
30100	1019
30100	1020
30100	1021
30100	1032
30100	1033
30200	2020
30200	2021
30200	2029
30200	2030
30200	2031
30200	2032
30200	2035
30200	2036
30200	2037
30200	2038
30200	2039
30200	2040
30200	2041
30200	2042
30200	2043

Submitted Date: 8/17/2009 8:17:11 PM	**Easygrants ID: 1410**
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Page County Broadband Authority
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Tom M Cardman

30200 2044
30200 2045
30200 2046
30200 2047
30200 2048
30200 2049
30200 2050
30200 2053
30200 2054
30200 2062
30200 3000
30200 3001
30200 3002
30200 3003
30200 3004
30200 3005
30200 3006
30200 3007
30200 3008
30200 3009
30200 3010
30200 3011
30200 3012
30200 3013
30200 3014
30200 3015
30200 3022
30200 3023
30200 3024
30300 3003
30300 3005
30300 3006
30300 3026
30300 3027

30300 3030
30300 3031
30300 4001
30300 4002
30300 4003
30300 4004
30300 4005
30300 4006
30300 4007
30300 4008
30300 4009
30300 4010
30300 4011
30300 4012
30300 4013
30300 4014
30300 4015
30300 4016
30300 4017
30300 4018
30300 4019
30300 4020
30300 4021
30300 4026
30300 4027
30300 4035
30300 4036
30300 4037
30300 4038
30300 4039
30300 4040
30300 4041
30300 4044
30300 4045

Submitted Date: 8/17/2009 8:17:11 PM	**Easygrants ID: 1410**
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Page County Broadband Authority
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Tom M Cardman

30300 4046
30300 4047

Last Mile Service Area Name: Luray
Community Name: Luray
Rural Calssification of the Community: Rural
BIP – Service Status: Underserved

BIP - If Service Status is "Underserved" please select at least one applicable option from this list.
The rate of broadband subscribership for the census-designated community [or other area] is 40% of households or less.

BTOP - Service Status: Underserved

BTOP - If Service Status is "Underserved" please select at least one applicable option from this list.
The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles of Service Area: 5
Total Population : 4,871
Total Number of Households: 2,037
Total Number of Businesses: 381
Total Number of Critical Community Facilities, Anchor Institutions and Public Safety Entities: 20

Middle Mile Span Name: Luray

Census Blocks in Middle Mile Span: TRACT BLOCK

30100 1007
30100 1009
30100 1011
30100 1012
30100 1017
30100 1018
30100 1019
30100 1020
30100 1021

Submitted Date: 8/17/2009 8:17:11 PM	**Easygrants ID: 1410**
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Page County Broadband Authority
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Tom M Cardman

30100 1032
30100 1033
30200 2020
30200 2021
30200 2029
30200 2030
30200 2031
30200 2032
30200 2035
30200 2036
30200 2037
30200 2038
30200 2039
30200 2040
30200 2041
30200 2042
30200 2043
30200 2044
30200 2045
30200 2046
30200 2047
30200 2048
30200 2049
30200 2050
30200 2053
30200 2054
30200 2062
30200 3000
30200 3001
30200 3002
30200 3003
30200 3004
30200 3005
30200 3006

Submitted Date: 8/17/2009 8:17:11 PM	**Easygrants ID: 1410**
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Page County Broadband Authority
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Tom M Cardman

30200 3007
30200 3008
30200 3009
30200 3010
30200 3011
30200 3012
30200 3013
30200 3014
30200 3015
30200 3022
30200 3023
30200 3024
30300 3003
30300 3005
30300 3006
30300 3026
30300 3027
30300 3030
30300 3031
30300 4001
30300 4002
30300 4003
30300 4004
30300 4005
30300 4006
30300 4007
30300 4008
30300 4009
30300 4010
30300 4011
30300 4012
30300 4013
30300 4014
30300 4015

Submitted Date: 8/17/2009 8:17:11 PM	**Easygrants ID: 1410**
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Page County Broadband Authority
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Tom M Cardman

30300 4016
30300 4017
30300 4018
30300 4019
30300 4020
30300 4021
30300 4026
30300 4027
30300 4035
30300 4036
30300 4037
30300 4038
30300 4039
30300 4040
30300 4041
30300 4044
30300 4045
30300 4046
30300 4047

Last Mile Service Area Name: Luray
Community Name: Other Area
Rural Calssification of the Community: Rural
BIP – Service Status: Underserved

BIP - If Service Status is "Underserved" please select at least one applicable option from this list.
The rate of broadband subscribership for the census-designated community [or other area] is 40% of households or less.

BTOP - Service Status: Underserved

BTOP - If Service Status is "Underserved" please select at least one applicable option from this list.
The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles of Service Area: 22

Submitted Date: 8/17/2009 8:17:11 PM	**Easygrants ID: 1410**
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Page County Broadband Authority
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Tom M Cardman

Total Population : 485
Total Number of Households: 123
Total Number of Businesses: 54
Total Number of Critical Community Facilities, Anchor Institutions and Public Safety Entities: 1

Middle Mile Span Name: Luray to Stanley

Census Blocks in Middle Mile Span:

TRACT	BLOCK
30200	3002
30200	3007
30200	3008
30200	3013
30200	3014
30200	3015
30200	3017
30200	3018
30200	3019
30200	3020
30200	3021
30200	3022
30300	2004
30300	2005
30300	2006
30300	2007
30300	2008
30300	2010
30300	2013
30300	2014
30300	2015
30300	2020
30400	2000
30400	2001
30400	2002
30400	2004

Submitted Date: 8/17/2009 8:17:11 PM	**Easygrants ID: 1410**
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Page County Broadband Authority
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Tom M Cardman

30400 2006
30400 2007
30400 2008
30400 2014
30400 2015
30400 2016
30400 2027
30400 3002
30400 3003
30400 3004
30400 3005
30400 3006

Last Mile Service Area Name: Stanley
Community Name: **Stanley**
Rural Calssification of the Community: Rural
BIP – Service Status: Underserved

BIP - If Service Status is "Underserved" please select at least one applicable option from this list.
The rate of broadband subscribership for the census-designated community [or other area] is 40% of households or less.

BTOP - Service Status: Underserved

BTOP - If Service Status is "Underserved" please select at least one applicable option from this list.
The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles of Service Area: 1
Total Population : 1,326
Total Number of Households: 562
Total Number of Businesses: 92
Total Number of Critical Community Facilities, Anchor Institutions and Public Safety Entities: 6

Middle Mile Span Name: **Luray to Stanley**

Submitted Date: 8/17/2009 8:17:11 PM	**Easygrants ID: 1410**
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Page County Broadband Authority
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Tom M Cardman

Census Blocks in Middle Mile Span: TRACT BLOCK

30200 3002
30200 3007
30200 3008
30200 3013
30200 3014
30200 3015
30200 3017
30200 3018
30200 3019
30200 3020
30200 3021
30200 3022
30300 2004
30300 2005
30300 2006
30300 2007
30300 2008
30300 2010
30300 2013
30300 2014
30300 2015
30300 2020
30400 2000
30400 2001
30400 2002
30400 2004
30400 2006
30400 2007
30400 2008
30400 2014
30400 2015
30400 2016
30400 2027

Submitted Date: 8/17/2009 8:17:11 PM	**Easygrants ID: 1410**
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Page County Broadband Authority
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Tom M Cardman

30400 3002
30400 3003
30400 3004
30400 3005
30400 3006

Last Mile Service Area Name: Stanley
Community Name: **Stanley - Other Area**
Rural Calssification of the Community: Rural
BIP – Service Status: Underserved

BIP - If Service Status is "Underserved" please select at least one applicable option from this list.
The rate of broadband subscribership for the census-designated community [or other area] is 40% of households or less.

BTOP - Service Status: Underserved

BTOP - If Service Status is "Underserved" please select at least one applicable option from this list.
The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles of Service Area: 26
Total Population : 2,931
Total Number of Households: 1,141
Total Number of Businesses: 62
Total Number of Critical Community Facilities, Anchor Institutions and Public Safety Entities: 9

Middle Mile Span Name: **Stanley to Shenandoah**

Census Blocks in Middle Mile Span: TRACT BLOCK

30400 1000
30400 1004
30400 1006
30400 1007
30400 1008
30400 1009

Submitted Date: 8/17/2009 8:17:11 PM	**Easygrants ID: 1410**
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Page County Broadband Authority
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Tom M Cardman

30400 1010
30400 1011
30400 1012
30400 1013
30400 1014
30400 1015
30400 1016
30400 1022
30400 1024
30400 1025
30400 1026
30400 1999
30400 2015
30400 2018
30400 2019
30400 2020
30400 2021
30400 2023
30400 2024
30400 2026
30400 2027
30400 3005
30400 3006
30400 3007
30400 5018
30400 5019
30400 5999
30500 1008
30500 1011
30500 1027
30500 1029
30500 1030
30500 1031
30500 1032

Submitted Date: 8/17/2009 8:17:11 PM	**Easygrants ID: 1410**
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Page County Broadband Authority
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Tom M Cardman

30500 1033
30500 1034
30500 1035
30500 1036
30500 1037
30500 1038
30500 1039
30500 1051
30500 1996
30500 1997
30500 1998
30500 1999
30500 2000
30500 2001
30500 2002
30500 2003
30500 2004
30500 2005
30500 2006
30500 2007
30500 2008
30500 2009
30500 2011
30500 2012
30500 2013
30500 2014
30500 2015
30500 2016
30500 2017
30500 2018
30500 2021
30500 2022
30500 2023
30500 2025

Submitted Date: 8/17/2009 8:17:11 PM	**Easygrants ID: 1410**
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Page County Broadband Authority
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Tom M Cardman

30500 2998
30500 2999
30500 4012
30500 4013
30500 4014
30500 4015
30500 5006
30500 5009
30500 5010
30500 5012
30500 5013
30500 5014
30500 5015
30500 5024
30500 5025
30500 5026
30500 5027
30500 5028
30500 6000
30500 6001
30500 6004
30500 6005
30500 6006
30500 6007
30500 6008
30500 6011
30500 6012
30500 6013
30500 6015
30500 6016
30500 6017
30500 6018
30500 6019
30500 6020

Submitted Date: 8/17/2009 8:17:11 PM	**Easygrants ID: 1410**
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Page County Broadband Authority
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Tom M Cardman

30500 6021
30500 6022
30500 6023
30500 6024
30500 6025
30500 6026
30500 6027
30500 6029
30500 6030
30500 6031
30500 6032
30500 6033
30500 6034
30500 6035
30500 6036
30500 6037

Last Mile Service Area Name: Shenandoah
Community Name: **Shenandoah**
Rural Calssification of the Community: Rural
BIP – Service Status: Underserved

BIP - If Service Status is "Underserved" please select at least one applicable option from this list.
The rate of broadband subscribership for the census-designated community [or other area] is 40% of households or less.

BTOP - Service Status: Underserved

BTOP - If Service Status is "Underserved" please select at least one applicable option from this list.
The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles of Service Area: 1
Total Population : 1,878
Total Number of Households: 812
Total Number of Businesses: 102
Total Number of Critical Community Facilities, Anchor Institutions and Public Safety Entities: 4

Submitted Date: 8/17/2009 8:17:11 PM	**Easygrants ID: 1410**
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Page County Broadband Authority
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Tom M Cardman

Middle Mile Span Name: Stanley to Shenandoah

Census Blocks in Middle Mile Span:

TRACT	BLOCK
30400	1000
30400	1004
30400	1006
30400	1007
30400	1008
30400	1009
30400	1010
30400	1011
30400	1012
30400	1013
30400	1014
30400	1015
30400	1016
30400	1022
30400	1024
30400	1025
30400	1026
30400	1999
30400	2015
30400	2018
30400	2019
30400	2020
30400	2021
30400	2023
30400	2024
30400	2026
30400	2027
30400	3005
30400	3006
30400	3007

30400 5018
30400 5019
30400 5999
30500 1008
30500 1011
30500 1027
30500 1029
30500 1030
30500 1031
30500 1032
30500 1033
30500 1034
30500 1035
30500 1036
30500 1037
30500 1038
30500 1039
30500 1051
30500 1996
30500 1997
30500 1998
30500 1999
30500 2000
30500 2001
30500 2002
30500 2003
30500 2004
30500 2005
30500 2006
30500 2007
30500 2008
30500 2009
30500 2011
30500 2012

Submitted Date: 8/17/2009 8:17:11 PM	**Easygrants ID: 1410**
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Page County Broadband Authority
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Tom M Cardman

30500 2013
30500 2014
30500 2015
30500 2016
30500 2017
30500 2018
30500 2021
30500 2022
30500 2023
30500 2025
30500 2998
30500 2999
30500 4012
30500 4013
30500 4014
30500 4015
30500 5006
30500 5009
30500 5010
30500 5012
30500 5013
30500 5014
30500 5015
30500 5024
30500 5025
30500 5026
30500 5027
30500 5028
30500 6000
30500 6001
30500 6004
30500 6005
30500 6006
30500 6007

Submitted Date: 8/17/2009 8:17:11 PM	**Easygrants ID: 1410**
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Page County Broadband Authority
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Tom M Cardman

30500 6008
30500 6011
30500 6012
30500 6013
30500 6015
30500 6016
30500 6017
30500 6018
30500 6019
30500 6020
30500 6021
30500 6022
30500 6023
30500 6024
30500 6025
30500 6026
30500 6027
30500 6029
30500 6030
30500 6031
30500 6032
30500 6033
30500 6034
30500 6035
30500 6036
30500 6037

Last Mile Service Area Name: Shenandoah
Community Name: Other Area
Rural Calssification of the Community: Rural
BIP – Service Status: Underserved

BIP - If Service Status is "Underserved" please select at least one applicable option from this list.
The rate of broadband subscribership for the census-designated community [or other area] is 40% of households or less.

Broadband USA

Broadband Infrastructure Application
Submission to RUS (BIP) and NTIA (BTOP)

Submitted Date: 8/17/2009 8:17:11 PM	**Easygrants ID: 1410**
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Page County Broadband Authority
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Tom M Cardman

BTOP - Service Status: Underserved

BTOP - If Service Status is "Underserved" please select at least one applicable option from this list.
The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles of Service Area: 26
Total Population : 2,347
Total Number of Households: 915
Total Number of Businesses: 33
Total Number of Critical Community Facilities, Anchor Institutions and Public Safety Entities: 10

Submitted Date: 8/17/2009 8:17:11 PM	**Easygrants ID: 1410**
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Page County Broadband Authority
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Tom M Cardman

Uploads

The following pages contain the following uploads provided by the applicant:

Upload Name
16) Q-45. Attachment G - Detailed Project Cost
09) Q-31. Attachment D - Engineer Certification*
13) Q-40. Attachment F - Legal Opinion*
26) Pg-22. BTOP ONLY Certification Requirements*
27) Pg-23. BTOP ONLY Att. N - Assur-Construction*
28) Pg-24. BTOP ONLY Attachment O - Lobbying*
31) Pg-27. BIP ONLY Equal Opportunity*
32) Pg-28. BIP ONLY Architectural Barriers*
33) Pg-29. BIP ONLY Relocation and Real Property*
34) Pg-30. BIP ONLY Debarment and Suspension*
35) Pg-31. BIP ONLY Lobbying Certification*

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25) BTOP ONLY Authentication*
04) Q-20. Attachment B - Middle Mile Offerings
05) Q-21. Attachment C - Competitor Tables
08) Q-30. Network Diagram
12) Q-39. Organization Chart
17) Q-47. Historical Financial Statements
18) Q-48. Attachment H - Subscriber Estimates
19) Q-49.Attachment I - Projects, Rates - Voice
20) Q-49.Attachment J - Projects, Rates - Video**
15) Q-44. JOINT APPS ONLY: Additional Budget
29) Pg-25. BTOP ONLY Attachment P - Disclosure*
30) Pg-26. BTOP ONLY Attachment Q - Lobbying*

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Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Page County Broadband Authority
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Dr. Tom M Cardman

24) Q-50. Financial Assumptions
14) Q-41. Government and Other Key Partnerships
10) Q-34. Attachment E - Build-Out Timeline
43) Supplemental Information 1
22) Q-50. Attachment L - Balance Sheet
21) Q-50. Attachment K - Income Statement
42) Pg-35 - Step 2 Form -BIP ONLY- Service Metric
23) Q-50. Attachment M - Statement of Cash Flows
11) Q-37. Management Team Resumes

To preserve the integrity of the uploaded document, headers, footers and page numbers have not been added by the system

Our strategy for partnering is to reach out to organizations and facilitate cooperation which is evidenced by the attached letters:

The **Northern Shenandoah Valley Regional Commission** is the lead planning agency for this region. The BBA fiber project is the number one development priority from this agency.

The County of Warren, Virginia, is interested in establishing a multi-jurisdictional partnership.

The Shenandoah Valley Partnership is a regional economic agency. A fiber network will enhance SVP's ability to help Page County attract higher-wage firms to the area.

Shentel, a regional telecommunications company, has towers within reach of the middle mile project and will provide last mile build out as well as generate significant revenues for the project.

The fiber network will enable **Page Memorial Hospital** to deliver services at satellite offices in Stanley and Shenandoah where LMI populations live. It will provide access to telemedicine from health care facilities located in Winchester, VA (50 miles away).

Fiber connection to **Lord Fairfax's** campuses (50 miles away) will deliver new educational opportunities to local students. Page County high school graduation rates are competitive with the rest of Virginia, but post-secondary rates are significantly lower. Better access to post-secondary education is critical to improve career opportunities.

Page County Public Schools and **Massanutten Regional Library** are establishing programs using high speed for children and disadvantaged populations. MRL is in discussions with the **Library of Virginia** and the **Gates Foundation** to bring high speed to all libraries in this region.

Page County's Fire and Emergency Medical Services and **Sheriff's Office** are committed to using high speed communications to enhance their services.

Premier Technical Services is building a Data Center and COOP facility in Page County, creating high-paying jobs.

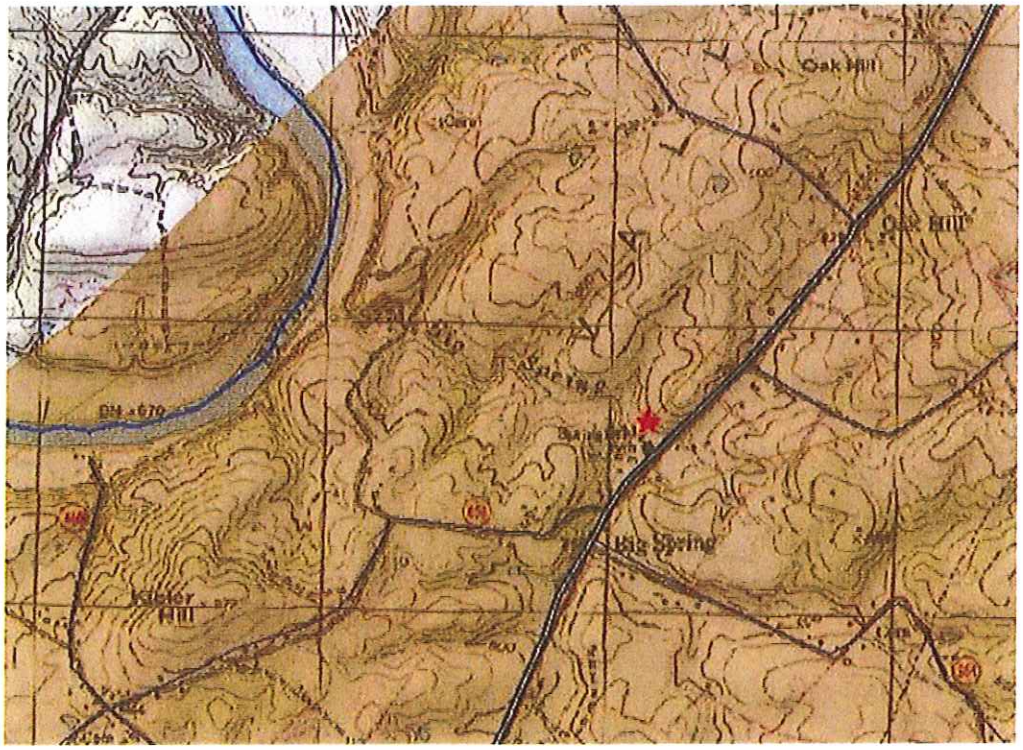
20. Service Offerings:

Community organizations and institutions will be accorded access to the Page County fiber optic network as noted in Attachment B. It should be noted that the network topography was deliberately designed to pass within every school, library, government office, municipal facility, fire, police, public safety facility and recreation facility in the county.

In addition, letters of intent have been obtained from these entities indicating their willingness to enter into service agreements for use of the network once it has been approved.

As noted in Question 22 on non-discrimination, these institutions will have access to the network via a private 100 Mb interconnection separate from the public Internet, and with no interference with or restrictions on their use.

SITE DATABASE RECORDS REPORT



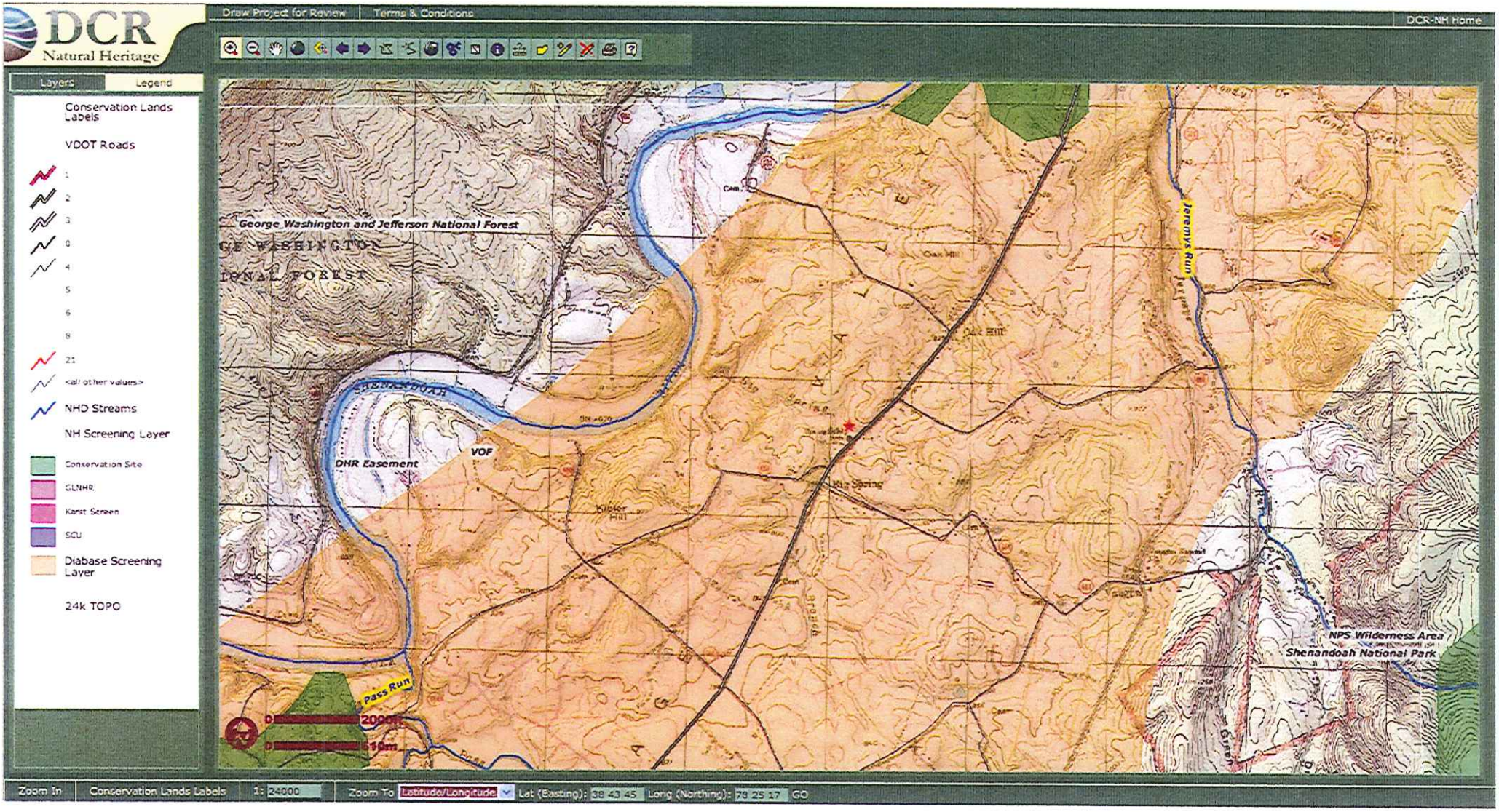
Page Tower Site 0

Big Springs, Page County, Virginia

78° 25' 17.7 W, 38° 43' 45.14 N

CLARK • NEXSEN
Architecture & Engineering

6160 Kempsville Circle, Suite 200A
Norfolk, Virginia 23502
(757) 455-5800 Fax (757) 455-5638
www.clarknexsen.com


DCR
Natural Heritage
Draw Project for Review
Terms & Conditions
DCR-NH Home
Layers
Legend
Conservation Lands Labels
VDOT Roads
1
2
3
0
4
5
6
8
21
<all other values>
NHD Streams
NH Screening Layer
Conservation Site
GLNHR
Karst Screen
SCU
Diabase Screening Layer
24k TOPO
George Washington and Jefferson National Forest
DHR Easement
VOF
Jeremys Run
Pass Run
NPS Wilderness Area
Shenandoah National Park
Zoom In
Conservation Lands Labels
1: 24000
Zoom To
Latitude/Longitude
Lat (Easting): 38 43 45
Long (Northing): 78 25 17
GO

Virginia Department of Game and Inland Fisheries

12/11/2009 2:18:55 PM

Fish and Wildlife Information Service

VaFWIS Initial Project Assessment Report Compiled on 12/11/2009, 2:18:55 PM

Help

Known or likely to occur within a **2 mile radius of 38,43,44.9 78,25,17.9** in **139 Page County, VA**

460 Known or Likely Species ordered by Status Concern for Conservation (displaying first 28) (28 species with Status* or Tier I**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
020045	FESE	I	Salamander, Shenandoah	Plethodon shenandoah		BOVA
030062	ST	I	Turtle, wood	Glyptemys insculpta		BOVA
040096	ST	I	Falcon, peregrine	Falco peregrinus		BOVA
040129	ST	I	Sandpiper, upland	Bartramia longicauda		BOVA
040293	ST	I	Shrike, loggerhead	Lanius ludovicianus	Yes	CBC,BOVA
040093	FSST	II	Eagle, bald	Haliaeetus leucocephalus		BOVA
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans		BOVA
100248	FS	I	Fritillary, regal	Speyeria idalia idalia		BOVA
040372	SS	I	Crossbill, red	Loxia curvirostra	Yes	CBC
040306	SS	I	Warbler, golden-winged	Vermivora chrysoptera		BOVA
040213	SS	II	Owl, northern saw-whet	Aegolius acadicus	Yes	CBC
040266	SS	II	Wren, winter	Troglodytes troglodytes	Yes	CBC,BOVA
030063	CC	III	Turtle, spotted	Clemmys guttata		BOVA
040094	SS	III	Harrier, northern	Circus cyaneus	Yes	CBC,BOVA
040204	SS	III	Owl, barn	Tyto alba pratincola	Yes	CBC,BOVA
030012	CC	IV	Rattlesnake, timber	Crotalus horridus		BOVA
040264	SS	IV	Creeper, brown	Certhia americana	Yes	CBC,BOVA
040364	SS		Dickcissel	Spiza americana		BOVA
040366	SS		Finch, purple	Carpodacus purpureus	Yes	CBC,BOVA
040285	SS		Kinglet, golden-crowned	Regulus satrapa	Yes	CBC,BOVA
040112	SS		Moorhen, common	Gallinula chloropus cachinnans		BOVA

040262	SS		Nuthatch, red-breasted	Sitta canadensis	Yes	CBC,BOVA
040210	SS		Owl, long-eared	Asio otus	Yes	CBC
040278	SS		Thrush, hermit	Catharus guttatus	Yes	CBC,BOVA
040314	SS		Warbler, magnolia	Dendroica magnolia		BOVA
050045	SS		Otter, northern river	Lontra canadensis lataxina		BOVA
040225		I	Sapsucker, yellow-bellied	Sphyrapicus varius	Yes	CBC,BOVA
040319		I	Warbler, black-throated green	Dendroica virens		BOVA

To view **All 460 species** View 460

* FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; FS=Federal Species of Concern; SC=State Candidate; CC=Collection Concern; SS=State Special Concern

** I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need

Anadromous Fish Use Streams

N/A

Colonial Water Bird Survey

N/A

Threatened and Endangered Waters

N/A

Cold Water Stream Survey (Trout Streams) (1 records) (Click on Stream Name to view complete reach history)
Managed Trout Species

View Map of All Cold Water Stream Surveys

Reach ID	Stream Name	Class	Brook Trout	Brown Trout	Rainbow Trout	View Map
07JER-01	Jeremys Run	Wild trout	Y			Yes

Public Holdings: (2 names)

Name	Agency	Level
Shenandoah National Park	National Park Service	Federal
George Washington National Forest	U.S. Forest Service	Federal

audit no. 271256 12/11/2009 2:18:55 PM Virginia Fish and Wildlife Information Service

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Christmas Bird Count Survey where Shrike, loggerhead (040293) observed

38,43,44.9 -78,25,17.8
is the Search Point

Show Position Rings
◉ Yes ○ No
1 mile and 1/4 mile at the Search Point

Show Search Area
◉ Yes ○ No
2 miles

Search Point is at map center

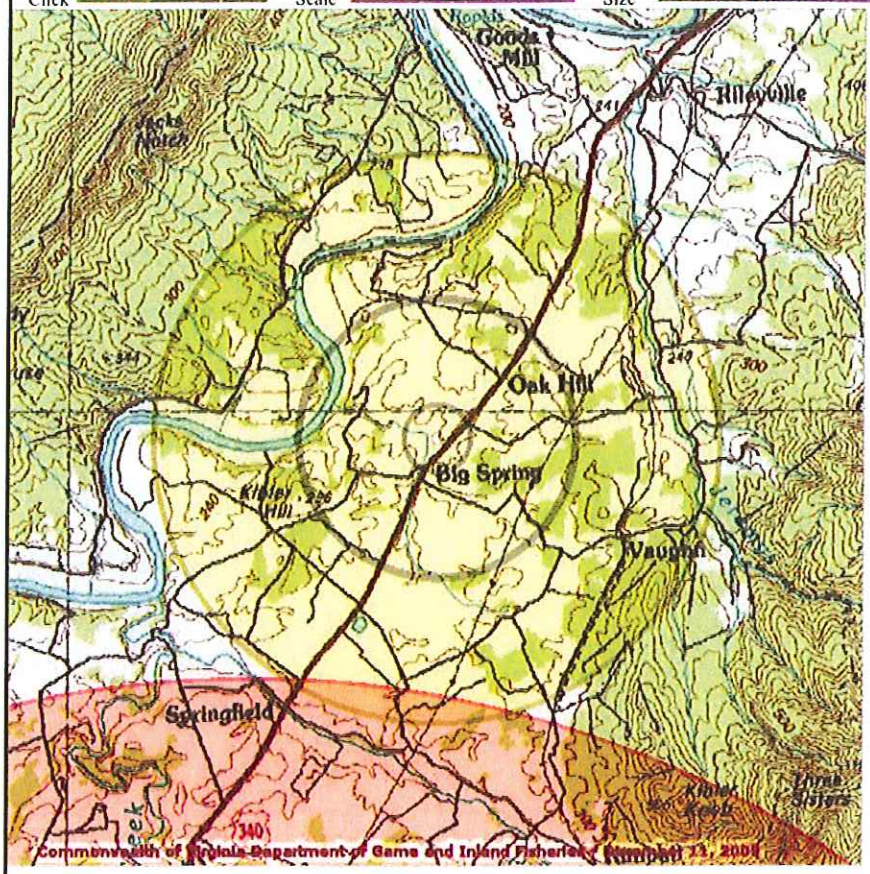
Base Map Choices
Topography

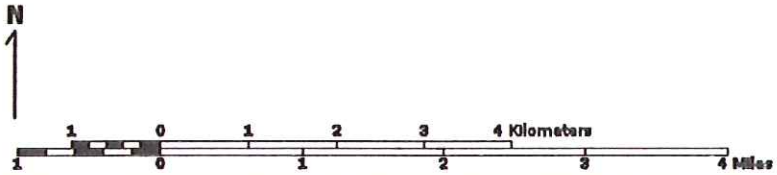
Map Overlay Choices
Current List: Search, CBC, Position

Map Overlay Legend

- Position Rings 1 mile and 1 4 mile at the Search Point
- 2 mile radius Search Area
- Data Collection Site

back | Map Click: Pan Id M | Map Scale: In Zoom Out | [Refresh Browser Page] | Screen Size: Small Size Big | [Help]





Point of Search 38,43,44.9 -78,25,17.8
Map Location 38,43,44.9 -78,25,17.8

Select **Coordinate System:**
◉ Degrees,Minutes,Seconds Latitude - Longitude
○ Decimal Degrees Latitude - Longitude
○ Meters UTM NAD83 East North Zone
○ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see terraserver-usa.com for details)

Map projection is UTM Zone 17 NAD 1983 with left 719353 and top 4294688. Pixel size is 16 meters . Coordinates displayed are Degrees, Minutes, Seconds North and West.Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixles. The map display represents 9600 meters east to west by 9600 meters north to south for a total of 92.1 square kilometers. The map display represents 31501 feet east to west by 31501 feet north to south for a total of 35.5 square miles.

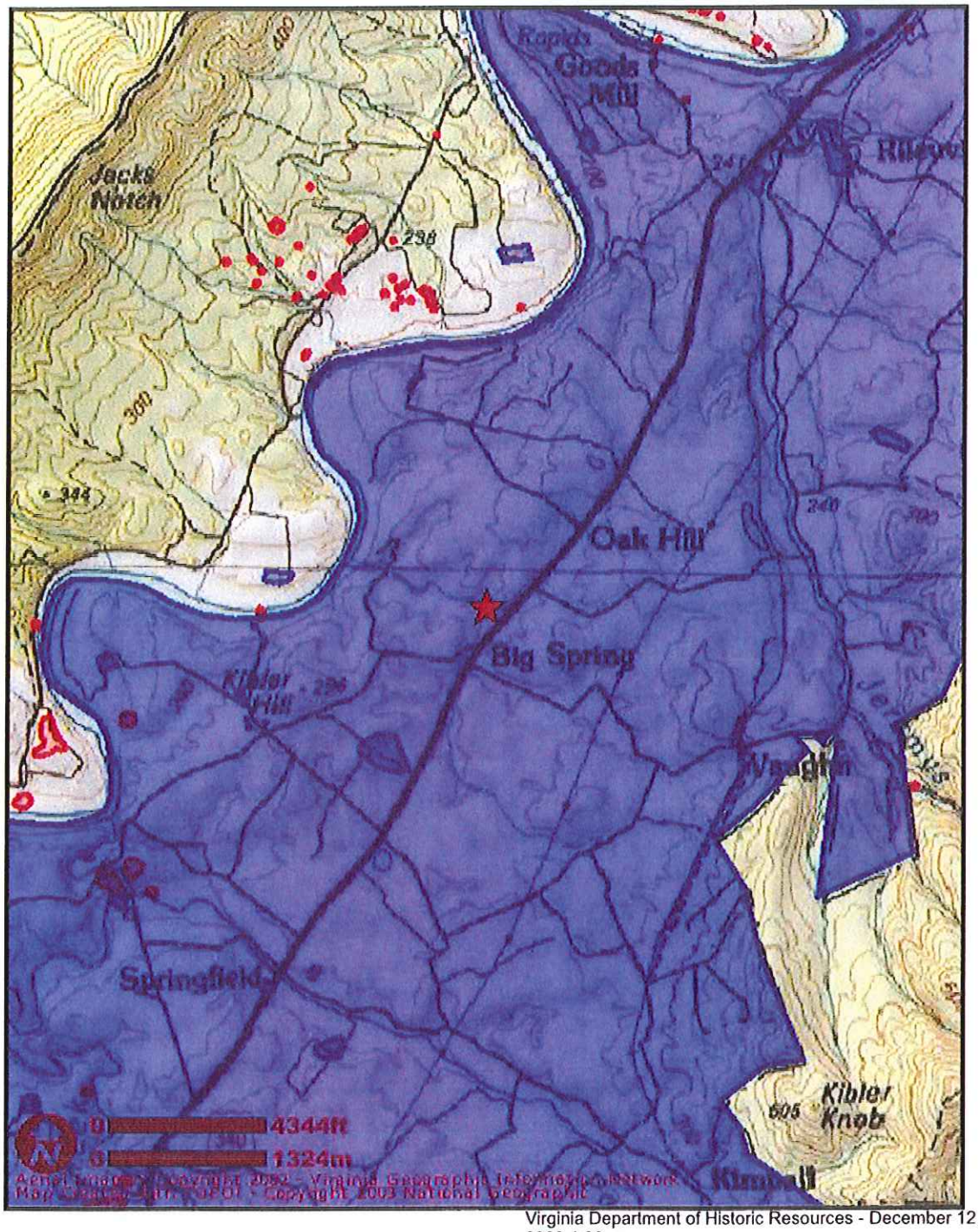
Black and white aerial photography aquired near 1990 and topographic maps are from the United States Department of the Interior, United States Geological Survey.
Shaded topographic maps are from TOPO! ©2006 National Geographic

http://www.nationa.geographic.com/topo
Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network
All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.

map assembled 2009-12-11 14:19:39 (qa/qc July 27, 2009 10:09 - tn=271256.2 dist=3218 I)

| DGIF | Credits | Disclaimer | Contact shirl.dressler@dgif.virginia.gov |Please view our privacy policy |
© Copyright: 1998-2009 Commonwealth of Virginia Department of Game and Inland Fisheries

Virginia Department of Historic Resources Data Sharing System, 12/11/2009



LEGEND
Interstates
Architecture (polygon)
Archaeology (polygon)
County Boundary
100k TOPO

Virginia Department of Historic Resources - December 12, 2009 1:30 pm

Page County Tower Site 0

1:24,000 scale

Virginia Department of Historic Resources
Reconnaissance Level Survey

DHR ID#: 069-0070 *Other DHR ID#:*

Resource Information

Resource Name(s): Big Spring Church {Current}
Date of Construction: ca 1870

Local Historic District :

Location of Resource

Commonwealth of Virginia

County/Independent City: Page

Magisterial District:
Town/Village/Hamlet:
Tax Parcel:
Zip Code:
Address(s): Route 340 {Current}
USGS Quadrangle Name: LURAY
UTM Boundary Coordinates :

NAD	Zone	Easting	Northing

UTM Center coordinates :
UTM Data Restricted?.

National Register Eligibility Status

Resource has not been evaluated.*

* Resource has not been formally evaluated by DHR or eligibility information has not been documented in DSS at this time.

source Description

Ownership Status:
Government Agency Owner:
Acreage:
Surrounding area:
Open to Public:
Site Description:

Secondary Resource Summary:

Individual Resource Information

Count	Resource Types	Resource Status
1	Church/Chapel	Contributing

Individual Resource Detail Information

Resource Type. Church/Chapel *Primary Resource?* Yes
Date of Construction: ca 1870 {Site Visit} *Accessed?*
Architectural Style: *Number of Stories:* 0.0
Form: *Condition:*
Interior Plan Type:
Threats to Resource:

Architecture Summary: Front of church has an 8-light transom and gable end returns. There are brackets and dentils on cornice.
End Architecture Summary Additions and alterations: End Additions and alterations Interior Description: End Interior Description

Primary Resource Exterior Component Description:

Component	Comp Type/Form	Material	Material Treatment
other	other	Wood	other

Foundation	other	Stone	other
Roof	Roof - Gable	Metal	Roof - Standing Seam
Structural System	Structural System - Frame	Wood	Structural System - Weatherboard
Windows	Windows - Sash, Double-Hung	Wood	Windows - 1/1, Paired

Historic Context(s): Religion

Significance Statement

National Register Eligibility Information (Intensive Level Survey):

National Register Criteria:

Period of Significance:
Level of Significance:

Graphic Media Documentation

DHR Negative #	*Photographic Media*	*Negative Repository*	*Photo Date*	*Photographer*
2251	B&W 35mm Photos		June 1973	

Bibliographic Documentation

Cultural Resource Management (CRM) Events

CRM Event # 1,
Cultural Resource Management Event: Survey:Phase I/Reconnaissance
Date of CRM Event: 9999
CRM Person: Ann Craddock
CRM Event Notes or Comments:
While not dated, this survey probably has the same date l
as the accompanying photographs.

Bridge Information

Cemetery Information

Ownership Information

Virginia Department of Historic Resources
Reconnaissance Level Survey

DHR ID#: 069-0071 *Other DHR ID#:*

Resource Information

Resource Name(s): Dofflemyer House, Old {Current}
Date of Construction: ca 1870

Local Historic District :

Location of Resource

Commonwealth of Virginia

County/Independent City: Page

Magisterial District:
Town/Village/Hamlet:
Tax Parcel:
Zip Code:
Address(s): Route 310 {Current}
USGS Quadrangle Name: LURAY
UTM Boundary Coordinates :

NAD	Zone	Easting	Northing

UTM Center coordinates :
UTM Data Restricted?.

National Register Eligibility Status

Resource has not been evaluated.*

* Resource has not been formally evaluated by DHR or eligibility information has not been documented in DSS at this time.

Resource Description

Ownership Status:
Government Agency Owner:
Acreage:
Surrounding area:
Open to Public:
Site Description:

Secondary Resource Summary:

Individual Resource Information

Count	Resource Types	Resource Status
1	Single Dwelling	Contributing

Individual Resource Detail Information

Resource Type. Single Dwelling *Primary Resource?* Yes
Date of Construction: ca 1870 {Site Visit} *Accessed?*
Architectural Style: *Number of Stories:* 2.0
Form: *Condition:*
Interior Plan Type:
Threats to Resource:

Architecture Summary: Porch shadows a good view of the entrance(s).
End Architecture Summary Additions and alterations: End Additions and alterations Interior Description: End Interior Description

Primary Resource Exterior Component Description:

Component	Comp Type/Form	Material	Material Treatment
Chimneys	Chimneys - Interior end	Brick	Chimneys, Cap, Corbeled

other	other	Wood	other
Foundation	other	Stone	other
Porch	Porch - 1-story, 3-bay	Wood	Porch - Posts
Roof	Roof - Gable	Metal	Roof - Standing Seam
Structural System	Structural System - Frame	Wood	Structural System - Weatherboard
Windows	Windows - Sash, Double-Hung	Wood	Windows - 6/6
Windows	Windows - Sash, Double-Hung	Wood	other

Historic Context(s): Domestic

Significance Statement

National Register Eligibility Information (Intensive Level Survey):

National Register Criteria:

Period of Significance:
Level of Significance:

Graphic Media Documentation

DHR Negative #	Photographic Media	Negative Repository	Photo Date	Photographer
2251	B&W 35mm Photos		July 1973	

Bibliographic Documentation

Cultural Resource Management (CRM) Events

CRM Event # 1,
Cultural Resource Management Event: Survey:Phase I/Reconnaissance
Date of CRM Event: 1973
CRM Person: Ann Craddock
CRM Event Notes or Comments:

Bridge Information

Cemetery Information

Ownership Information

Virginia Department of Historic Resources
Reconnaissance Level Survey

DHR ID#: 069-0072 *Other DHR ID#:*

Resource Information

Resource Name(s): Brumback, Edward, House {Current}
Date of Construction: ca 1808

Local Historic District :

National Register Eligibility Status

Resource has not been evaluated.*

* Resource has not been formally evaluated by DHR or eligibility information has not been documented in DSS at this time.

Location of Resource

Commonwealth of Virginia

County/Independent City: Page

Magisterial District:
Town/Village/Hamlet: Luray
Tax Parcel:
Zip Code:
Address(s): Route 340 {Current}
USGS Quadrangle Name: LURAY
UTM Boundary Coordinates :

NAD	Zone	Easting	Northing

UTM Center coordinates :
UTM Data Restricted?. No

Resource Description

Ownership Status: Private
Government Agency Owner:
Acreage:
Surrounding area: Rural
Open to Public: No
Site Description:

Secondary Resource Summary:

Individual Resource Information

Count	Resource Types	Resource Status
1	Other	Contributing
1	Smoke/Meat House	Contributing
0	Other	Contributing
1	Slave/Servant Quarters	Contributing
1	Single Dwelling	Contributing

Individual Resource Detail Information

Resource Type. Single Dwelling *Primary Resource?* Yes
Date of Construction: ca 1808 {Site Visit} *Accessed?*
Architectural Style: *Number of Stories:* 2.0
Form: *Condition:*
Interior Plan Type:
Threats to Resource:

Architecture Summary: Original section built ca. 1808 was four room, brick. Decorative sawn vergeboard in gable end and decorative bracketed cornice.

End Architecture Summary Additions and alterations: End Additions and alterations Interior Description: "Only one original mantle remains, in the left room of the two original rooms of the brick section. . . Kitchen was located to the south."

End Interior Description

Individual Resource Detail Information

Resource Type.	Other	*Primary Resource?*	No
Date of Construction:	9999	*Accessed?*	
Architectural Style:		*Number of Stories:*	0.0
Form:		*Condition:*	
Interior Plan Type:			
		Threats to Resource:	

Architecture Summary: Collection of other farm outbuildings.
End Architecture Summary Additions and alterations: End Additions and alterations Interior Description: End Interior Description

Individual Resource Detail Information

Resource Type.	Other	*Primary Resource?*	No
Date of Construction:	post 1808 {Site Visit}	*Accessed?*	
Architectural Style:		*Number of Stories:*	0.0
Form:		*Condition:*	
Interior Plan Type:			
		Threats to Resource:	

Architecture Summary: "The original ash house still stands."
End Architecture Summary Additions and alterations: End Additions and alterations Interior Description: End Interior Description

Individual Resource Detail Information

Resource Type.	Slave/Servant Quarters	*Primary Resource?*	No
Date of Construction:	post 1808 {Site Visit}	*Accessed?*	
Architectural Style:		*Number of Stories:*	1.0
Form:		*Condition:*	
Interior Plan Type:			
		Threats to Resource:	

Architecture Summary: Slaves house, had seven bunks upstairs.
Board and batten siding, a brick chimney rebuilt ca 1900, one sash window 6/6, gable metal standing seam roof.
End Architecture Summary Additions and alterations: End Additions and alterations Interior Description: End Interior Description

Individual Resource Detail Information

Resource Type.	Smoke/Meat House	*Primary Resource?*	No
Date of Construction:	1940 {Site Visit}	*Accessed?*	
Architectural Style:		*Number of Stories:*	0.0
Form:		*Condition:*	
Interior Plan Type:			
		Threats to Resource:	

Architecture Summary: End Architecture Summary Additions and alterations: End Additions and alterations Interior Description: End Interior Description

Primary Resource Exterior Component Description:

Component	Comp Type/Form	Material	Material Treatment
Chimneys	Chimneys - Exterior end	Brick	Chimneys, Cap, Corbeled
Chimneys	Chimneys - Interior	Brick	Chimneys, Cap, Corbeled
other	other	Wood	other
Porch	Porch - 1-story, 4-bay	Wood	Porch - Columns, Tuscan
Roof	Roof - Gable	Metal	Roof - Standing Seam
Structural System	Structural System - Masonry	Brick	Structural System - Stuccoed

Windows	Windows - Sash, Double-Hung	Wood	Windows - 6/6

Historic Context(s): Domestic
Subsistence/Agriculture

Significance Statement

Some interesting original outbuildings.

National Register Eligibility Information (Intensive Level Survey):

National Register Criteria:

Period of Significance:
Level of Significance:

Graphic Media Documentation

DHR Negative #	*Photographic Media*	*Negative Repository*	*Photo Date*	*Photographer*
2478	B&W 35mm Photos		August 1973	

Bibliographic Documentation

ltural Resource Management (CRM) Events

CRM Event # 1,
Cultural Resource Management Event: Survey:Phase II/Intensive
Date of CRM Event: 1973
CRM Person: Ann Craddock
CRM Event Notes or Comments:

Bridge Information

Cemetery Information

Ownership Information

Virginia Department of Historic Resources
Reconnaissance Level Survey

DHR ID#: **069-0197** *Other DHR ID#:*

Resource Information

Resource Name(s): Thomas Farm {Current}
Thomas Farm, Route 340 {Historic/Location}
Date of Construction: ca 1850

Local Historic District :

National Register Eligibility Status

Resource has not been evaluated.*

* Resource has not been formally evaluated by DHR or eligibility information has not been documented in DSS at this time.

Location of Resource

Commonwealth of Virginia

County/Independent City: Page

Magisterial District:
Town/Village/Hamlet:
Tax Parcel:
Zip Code:
Address(s): Route 340 {Current}
USGS Quadrangle Name: LURAY
UTM Boundary Coordinates :

NAD	Zone	Easting	Northing

UTM Center coordinates :
UTM Data Restricted?.

.source Description

Ownership Status:
Government Agency Owner:
Acreage: 335.00
Surrounding area:
Open to Public: No
Site Description:
1973 survey: none.
Secondary Resource Summary:

1973 survey: none.

Individual Resource Information

Count	Resource Types	Resource Status
1	Single Dwelling	Contributing

Individual Resource Detail Information

Resource Type.	Single Dwelling	*Primary Resource?*	Yes
Date of Construction:	ca 1850 {Site Visit}	*Accessed?*	Yes
Architectural Style:		*Number of Stories:*	2.0
Form:		*Condition:*	Fair
Interior Plan Type:	Two-Room, Single Pile		
		Threats to Resource:	Deterioration

Architecture Summary: Two-story, three-bay facade with front to left side wrapping porch (veranda.)

1973 Survey: House was built in two parts. Front of the house has a molded cornice, the back is simply three stretchers.

Primary Resource Exterior Component Description:

Virginia Department of Historic Resources
Reconnaissance Level Survey

DHR ID#: 069-0197 *Other DHR ID#:*

Component	Comp Type/Form	Material	Material Treatment
Chimneys	Chimneys - Exterior end	Brick	other
Porch	other	Wood	Porch - Posts, Turned
Structural System	Structural System - Masonry	Brick	other
Windows	Windows - Sash, Double-Hung	Wood	Windows - 2/2
Roof	Roof - Gable, Side	Metal	Roof - Standing Seam

Historic Time Period(s): N- Antebellum Period (1830 to 1860)

Historic Context(s): Domestic

Significance Statement

1973 survey:
First remembered owner was an Amos, who died before the Civil War.
Bought by Joe Burker.
Passed to David C. Burker, Joseph L. Burker, and finally Dorothy Foltz, from who the present owners bought it.

National Register Eligibility Information (Intensive Level Survey):

National Register Criteria:

Period of Significance:
Level of Significance:

Graphic Media Documentation

DHR Negative #	*Photographic Media*	*Negative Repository*	*Photo Date*	*Photographer*
2476	B&W 35mm Photos	VDHR	August 1973	A. Craddock

Bibliographic Documentation

Reference #: 1
Bibliographic RecordType: Oral History/Interview
Author: Rumsey Heiston
DHR CRM Report Number:
Notes:
Rumsey Heiston of Route 4, Luray.

Cultural Resource Management (CRM) Events

CRM Event # 1,
Cultural Resource Management Event: Survey:Phase I/Reconnaissance
Date of CRM Event: August 1973
CRM Person: Ann Craddock
CRM Event Notes or Comments:

Bridge Information

Cemetery Information

Ownership Information

Virginia Department of Historic Resources
Reconnaissance Level Survey

DHR ID#: 093-5027 *Other DHR ID#:*

Resource Information

Resource Name(s): Page Valley Rural Historic District {Historic/Current}

Date of Construction: 9999

Local Historic District :

National Register Eligibility Status

Property has been recommended Eligible for listing or is listed in the National Register of Historic Places

This Resource is associated with the Page Valley Rural Historic District

Location of Resource

Commonwealth of Virginia

County/Independent City: Page
Warren

Magisterial District:

Town/Village/Hamlet: Luray/Front Royal

Tax Parcel:

Zip Code:

Address(s): Route 340

USGS Quadrangle Name: BENTONVILLE
CHESTER GAP
FRONT ROYAL
LURAY
RILEYVILLE
STRASBURG
THORNTON GAP

UTM Boundary Coordinates :

NAD	Zone	Easting	Northing

UTM Center coordinates :

UTM Data Restricted?. No

Resource Description

Ownership Status: Private
Public - Local
Public - State

Government Agency Owner:

Acreage: 30,000.00

Surrounding area: Rural

Open to Public: Yes

Site Description:

2002: Acreage is approximately: 20,000-30,000 acres (It is about the same size as Madison-Barbour, Orange County: 31,200 acres or Southwest Mountains, Albemarle County: 31,975 acres).

Geographic Definition
Page Valley is the area between the towns of Front Royal and Luray. The Northern end of the Shenandoah Valley is defined by several smaller valleys: Fort Valley and Page Valley are the largest of these units. The Massanutten Mountain range rises steeply on the western side of Page Valley and the Blue Ridge Mountains define the eastern edge. The South Fork of the Shenandoah River runs through Page Valley.

Secondary Resource Summary:

N/A

Individual Resource Information

Count	Resource Types	Resource Status
1	Historic District	Contributing

Individual Resource Detail Information

Resource Type.	Historic District	*Primary Resource?*	Yes
Date of Construction:	9999	*Accessed?*	
Architectural Style:		*Number of Stories:*	0.0
Form:		*Condition:*	Good
Interior Plan Type:			
		Threats to Resource:	Development Transportation Expansion

2002: Because of its eastern and northern position it became one of the earliest settlement areas in the first wave of Pennsylvania Germans who came southward in the 1730s-1750s.

The district is one of the more pristine areas of the Shenandoah Valley. It conveys the history of German settlement and architecture; transportation history-railroad and historic turnpike; 19th century settlement patterns in the small villages along Route 340; early twentieth century automobile tourism (predating Skyline Drive) and Civil War history which include strategic use of the Valley for troop movements and several skirmish areas.

The recommended boundary only includes the eastern half of the Valley from the Blue Ridge Mountain ridge top to the South Fork of the Shenandoah River. Route 340 is a historic central feature as it started as a turnpike road well before the Civil War.

Note: The adjacent Fort Valley, to the west, is even more pristine than Page Valley.

Primary Resource Exterior Component Description:

Significance Statement

2002: General Significance

The concept of "Page Valley" has been reborn with the modern wine industry because of the quality of soil and type of light that you get in the Page Valley area. The use of "Page Valley" name was more popular in the 18th and 19th century. In the 18th century it was the easiest migration route for Germans (Brethren and Mennonites, Anabaptists) coming from Lancaster County and other Eastern Pennsylvania Counties (my German ancestors settled just south of Page Valley at Massanutten mountain tip). Fort Stover is a very important German site in Page Valley (on the register). Ed Chappell identified several rare Flurkuchenhaus plan buildings (3 rooms on the main floor with an interior kitchen) in Page Valley-groundbreaking work in the 1960s. The Brethren influence is at the Luray end of the Page Valley and Scots-Irish closer to Front Royal--Gooney Manor area.

Page Valley was often referenced during the Civil War. Confederate forces used the adjacent (northwestward) Fort Valley, a narrow, hard-to-access valley, to surprise Union forces to the east and west. The Page Valley area played an important strategic role during the War.

In the modern era, Skyline Caverns near Front Royal (c. 1937) and Luray Caverns (c. 1901) bookend the Valley as automobile era tourist sites. The area is unspoiled from strip and commercial development because Front Royal became the "Gateway to the Skyline Drive" after c. 1936 and most car traffic was diverted up onto the Skyline and then folks took 522 down to Luray to visit the Caverns. The Luray-Front Royal Turnpike was a busy road in the pre-Skyline Drive period (not to mention the travel to hunting lodges and fishing camps--Presidents T. Roosevelt and Hoover both had hunting camps in this region, but not in the Page Valley).

ational Register Eligibility Information (Intensive Level Survey):

National Register Criteria: A- Associated with Broad Patterns of History
C- Distinctive Characteristics of Architecture/Construction

Period of Significance:
Level of Significance:

NR Areas of Significance: Agriculture
Architecture
Exploration/Settlement
Historic - Non-aboriginal

Graphic Media Documentation

DHR Negative #	*Photographic Media*	*Negative Repository*	*Photo Date*	*Photographer*
	Color Photos		February 04, 2003	Keyed to Quad Maps

Bibliographic Documentation

Cultural Resource Management (CRM) Events

CRM Event # 1,
Cultural Resource Management Event: Federal Det. Of Eligibility
Date of CRM Event: July 10, 2003
CRM Person: NPS
CRM Event Notes or Comments:

The Page Valley Rural Historic District is eligible for the Niational Register of Historic Places for its historic and architectural significance under National Register Criteria A and C. The boundary of the eligible Page Valley Rural Historic District is that defined in a letter dated February 18, 2003, from the Virginia Department of historic Resources to the Virginia Department of Transportation, that is, defined by the west bank of the Shenandoah River, the boundary of the Shenandoah National Park to the east, Route 211 north of Luray to the south, and a northern limit along a line from the Indian Hollow Bridge (Route 613) followed southeast and terminating at the point of the National Park Service property north of Brush Mountain.

CRM Event # 2,
Cultural Resource Management Event: Survey:Phase I/Reconnaissance
Date of CRM Event: December 11, 2002
CRM Person: Marc Wagner
CRM Event Notes or Comments:

CRM Event # 3,

Cultural Resource Management Event: DHR Staff: Potentially Eligible

Date of CRM Event: July 29, 2002

CRM Person: DHR

CRM Event Notes or Comments:

Special meeting -- Project Review
Angie Edwards presenting:
Proposed Page Valley Rural Historic District, Page and Warren Counties (DHR File Number 093-5027).
This proposal arose from a proposed series of VDOT improvements (including new alignments and bridge replacements and improvements) along the Route 340 corridor in Page and Warren Counties, running roughly from Luray to Front Royal (Project Review numbers 1993-2334 and 1993-2444). The committee considered the resources in the area (examined during a recent site visit by David Edwards and Angie Edwards) and found that the area has an intact 18th through early 20th century cultural landscape, which could be evaluated under the categories of agriculture, industry, transportation, history, and architecture.
The area includes the Gooney Manor Loop Road Rural Historic District (Warren County, DHR file # 093-5026 and Project Review # 2002-0598), which has already been determined potentially eligible. In addition, the area includes some significant and individually-listed properties such as Fort Stover (DHR file # 069-0005).

The committee feels that the Proposed Page Valley Historic District is potentially eligible as a Rural Historic District. The boundaries for such a district would be north to south, extending from just north of Luray on the north to just south of Front Royal on the south; from east to west, from the boundaries of the Shenandoah National Park on the east to the east Fork of the Shenandoah River on the west. Such a rural historic district would be in keeping with the composition and character of such existing Rural Historic Districts as the Green Springs Rural Historic District, Louisa County, and the Southwest Mountains Rural Historic District, Albemarle County.

CRM Event # 4,
Cultural Resource Management Event: DHR Staff: Eligible
Date of CRM Event: February 06, 2003
CRM Person: DHR
CRM Event Notes or Comments:

Proposed Page Valley Rural Historic District, Page and Warren Counties, DHR File Number 093-5027; Project Review Numbers 1993-2444, 1993-2335, and 1993-2334.
After evaluation team members A. Edwards, Green, Holma, and Wagner, joined by D. Edwards of the Winchester office, made a site visit to the proposed Page Valley Historic District on 4 February 2003.

The Evaluation Team believes that the Page Valley Rural Historic District should constitute that area roughly defined by the Shenandoah River to the west, the boundary of the Shenandoah National Park to the east, Route 211 north of Luray to the south, and northern limit along a line from Indian Hollow Bridge (Route 613) followed southeast and terminating at the point of the National Park Service property north of Brush Mountain. [The northern boundary may be re-defined upon a new recommendation coming from David] The land and resources, both architectural and archaeological, included within these revised boundaries represent over 200 years of Euro-American occupation in the Page Valley. DHR believes that the Page Valley Rural Historic District is eligible under National Register Criterion A as an expression of early regional settlement and agricultural practices; Criterion C for its architectural merit, especially examples of vernacular ethnic German construction; and Criterion D for the architectural remains of early furnace sites.

Although DHR has now excluded most of the Warren County portion of the previously established boundary for the Page Valley Rural Historic District, we believe that there are smaller individual districts located in this area that are eligible for the National Register. VDOT has already identified and recommended as eligible one of these, Gooney Run Rural Historic District (DHR File Number 093-5026). Other potentially eligible historic districts that the Evaluation Team observed during its site visit include Browntown (DHR File Number 093-5032), Limeton (DHR File Number 093-5033), Bentonville (DHR File Number 093-5034), and a recreation-themed district encompassing the Skyline Motel (DHR File Number 093-5022) and Skyline Caverns (DHR File Number 093-0529).

VDOT identified two individually eligible resources located in the revised Page Valley Rural Historic District boundary. These are the Rileyville Historic District (DHR File Number 069-5253) and Milford Battlefield (DHR File Number 093-5023). VDOT recommended both as eligible for the National Register and DHR concurred. A third resource, the Compton Historic District (DHR File Number 069-5198), VDOT recommended as eligible, but DHR did not agree. After seeing Compton for itself, however, the Evaluation Team now concurs with the VDOT Recommendation that the Compton Historic District is eligible for the National Register.

Bridge Information

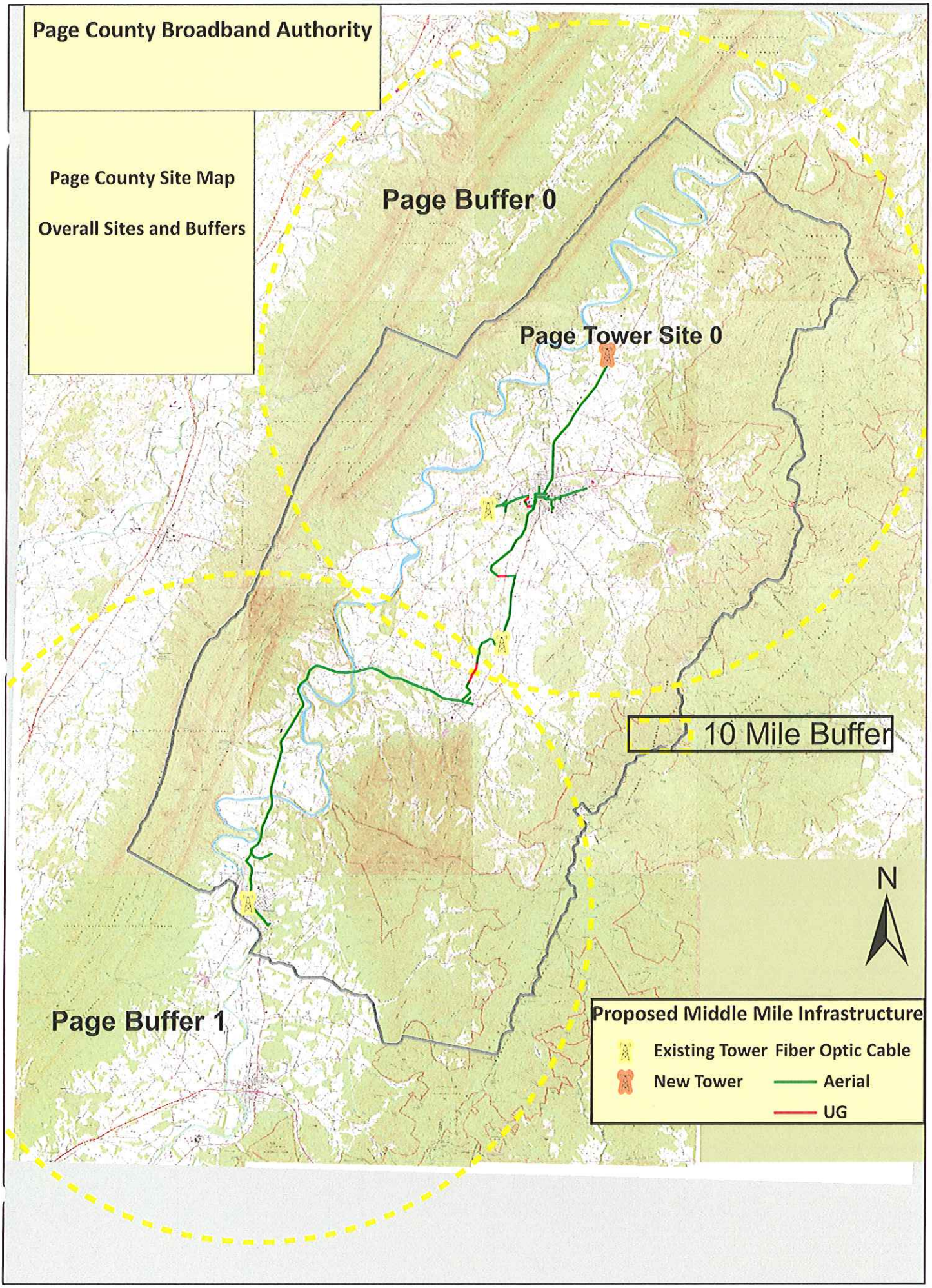
Cemetery Information

Ownership Information

Environmental Questionnaire-Response Document

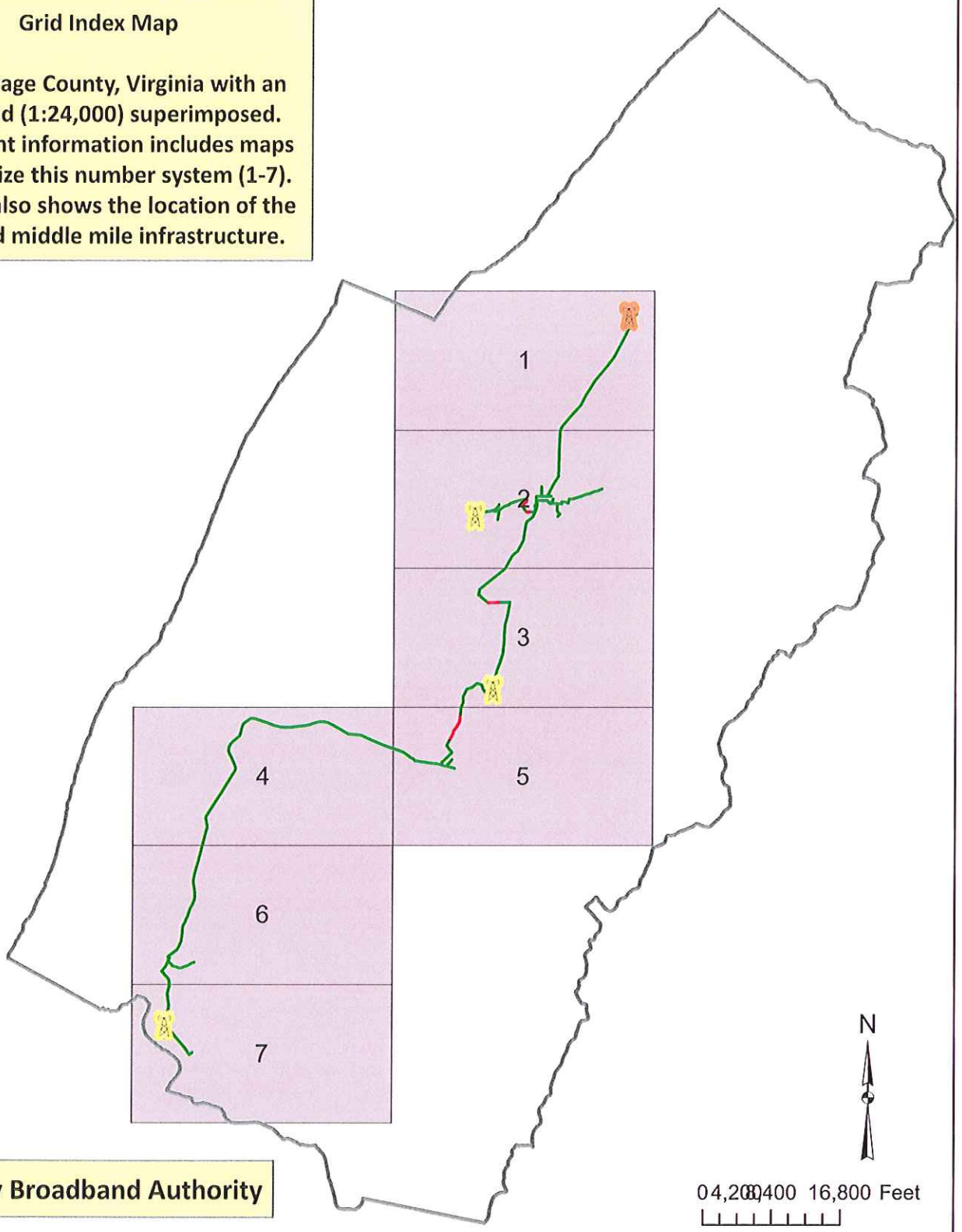
Page County Broadband Authority
Easy Grants ID 1410

Submitted December 18, 2009


Page County Broadband Authority
Page County Site Map
Overall Sites and Buffers
Page Buffer 0
Page Tower Site 0
10 Mile Buffer
N
Page Buffer 1
Proposed Middle Mile Infrastructure
Existing Tower
Fiber Optic Cable
New Tower
Aerial
UG

Grid Index Map

Map of Page County, Virginia with an index grid (1:24,000) superimposed. Subsequent information includes maps which utilize this number system (1-7). This map also shows the location of the proposed middle mile infrastructure.



Page County Broadband Authority

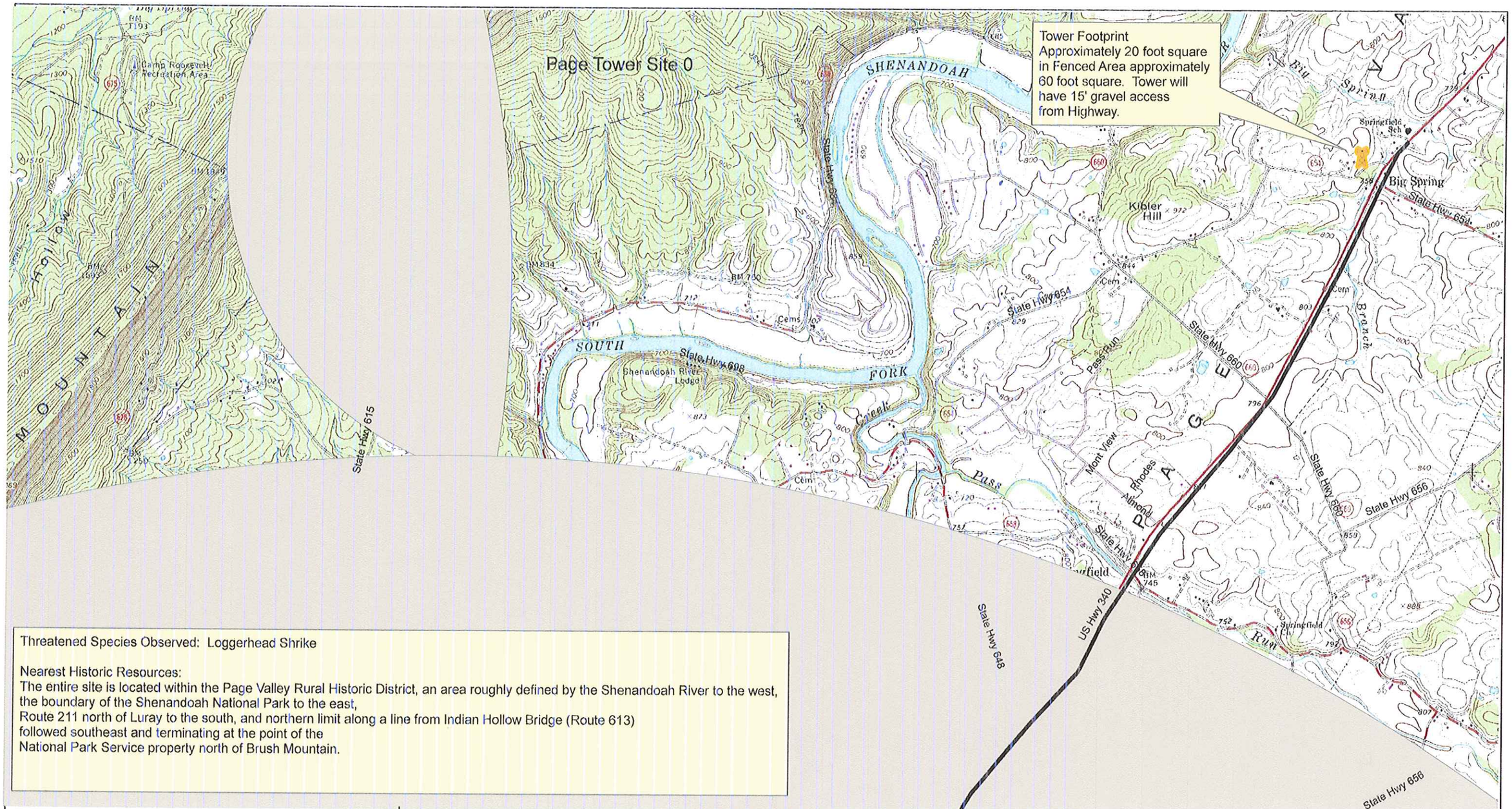
Proposed Middle Mile Infrastructure

- Existing Tower
- New Tower
- Fiber Optic Cable
  - Aerial
  - UG

Prepared by:

ICON BROADBAND TECHNOLOGIES
A Division of Icon Engineering, Inc.
6745 Bells Ferry Road
Woodstock, Georgia 30189

Page Co Proposed Broadband Network 20091214



Threatened Species Observed: Loggerhead Shrike

Nearest Historic Resources:
The entire site is located within the Page Valley Rural Historic District, an area roughly defined by the Shenandoah River to the west, the boundary of the Shenandoah National Park to the east,
Route 211 north of Luray to the south, and northern limit along a line from Indian Hollow Bridge (Route 613) followed southeast and terminating at the point of the
National Park Service property north of Brush Mountain.

Proposed Middle Mile Infrastructure

- Existing Tower
- New Tower
- Aerial Fiber
- Underground Fiber

N

0 0.125 0.25 0.5 Miles

Scale 1:24,000

See Page 2

All Fiber Optic Cable on State, County or Federal Road Right of Way except for access to Tower Site. Underground Cable will require approximately three foot wide by 30" deep or less opening. Aerial Fiber will be placed on existing utility pole lines unless otherwise noted.

Prepared by:

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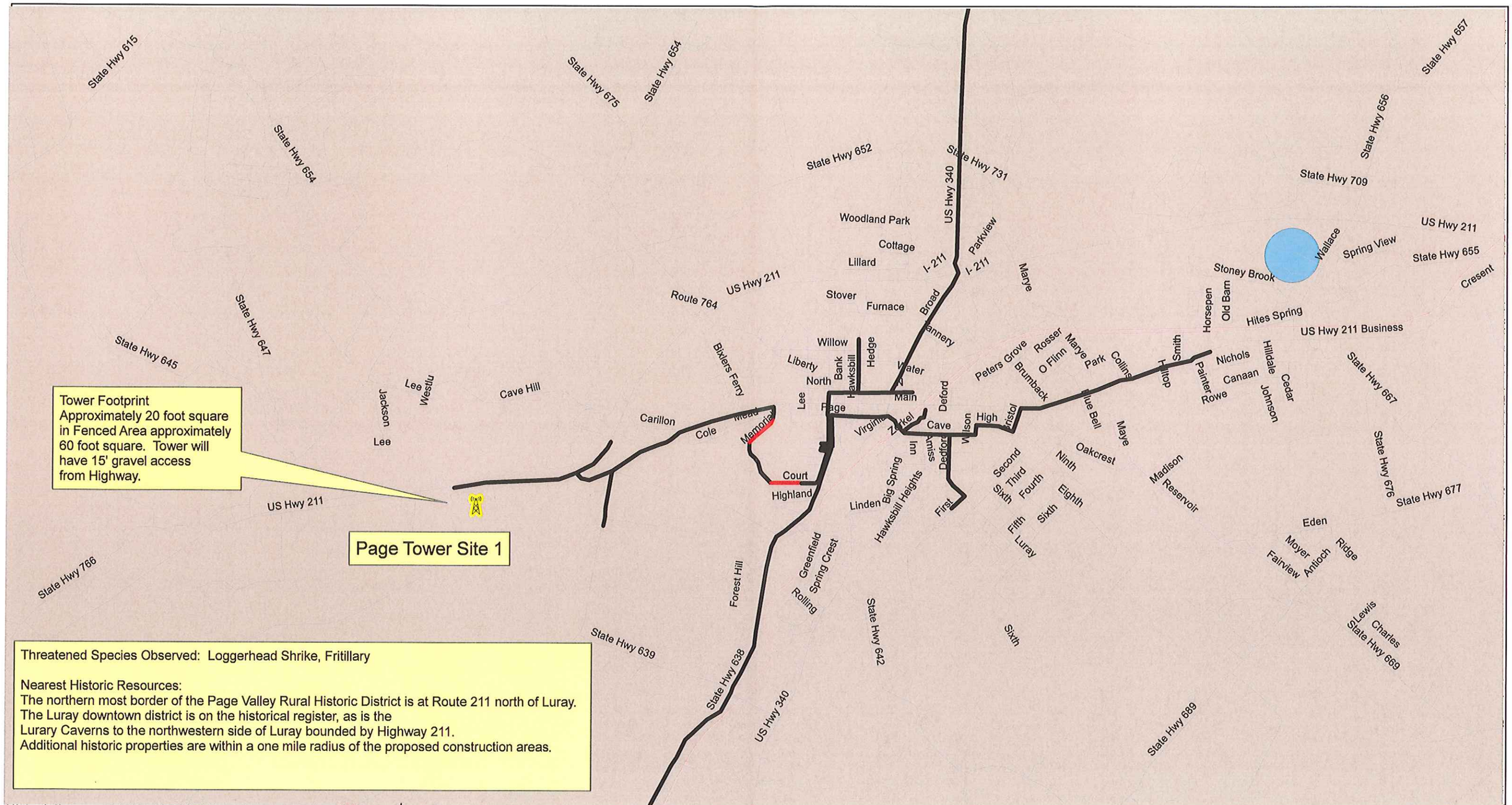
See Page 1



Tower Footprint
Approximately 20 foot square in Fenced Area approximately 60 foot square. Tower will have 15' gravel access from Highway.

Threatened Species Observed: Loggerhead Shrike, Fritillary

Nearest Historic Resources:
The northern most border of the Page Valley Rural Historic District is at Route 211 north of Luray.
The Luray downtown district is on the historical register, as is the
Lurary Caverns to the northwestern side of Luray bounded by Highway 211.
Additional historic properties are within a one mile radius of the proposed construction areas.

Proposed Middle Mile Infrastructure

Existing Tower — Aerial Fiber
New Tower — Underground Fiber

N

0 0.125 0.25 0.5 Miles

Scale 1:24,000

See Page 3

All Fiber Optic Cable on State, County or Federal Road Right of Way except for access to Tower Site. Underground Cable will require approximately three foot wide by 30" deep or less opening. Aerial Fiber will be placed on existing utility pole lines unless otherwise noted.

Prepared on: xx/xx/xx
dgeneralstorageMBWorkingjng20091028

Prepared by:

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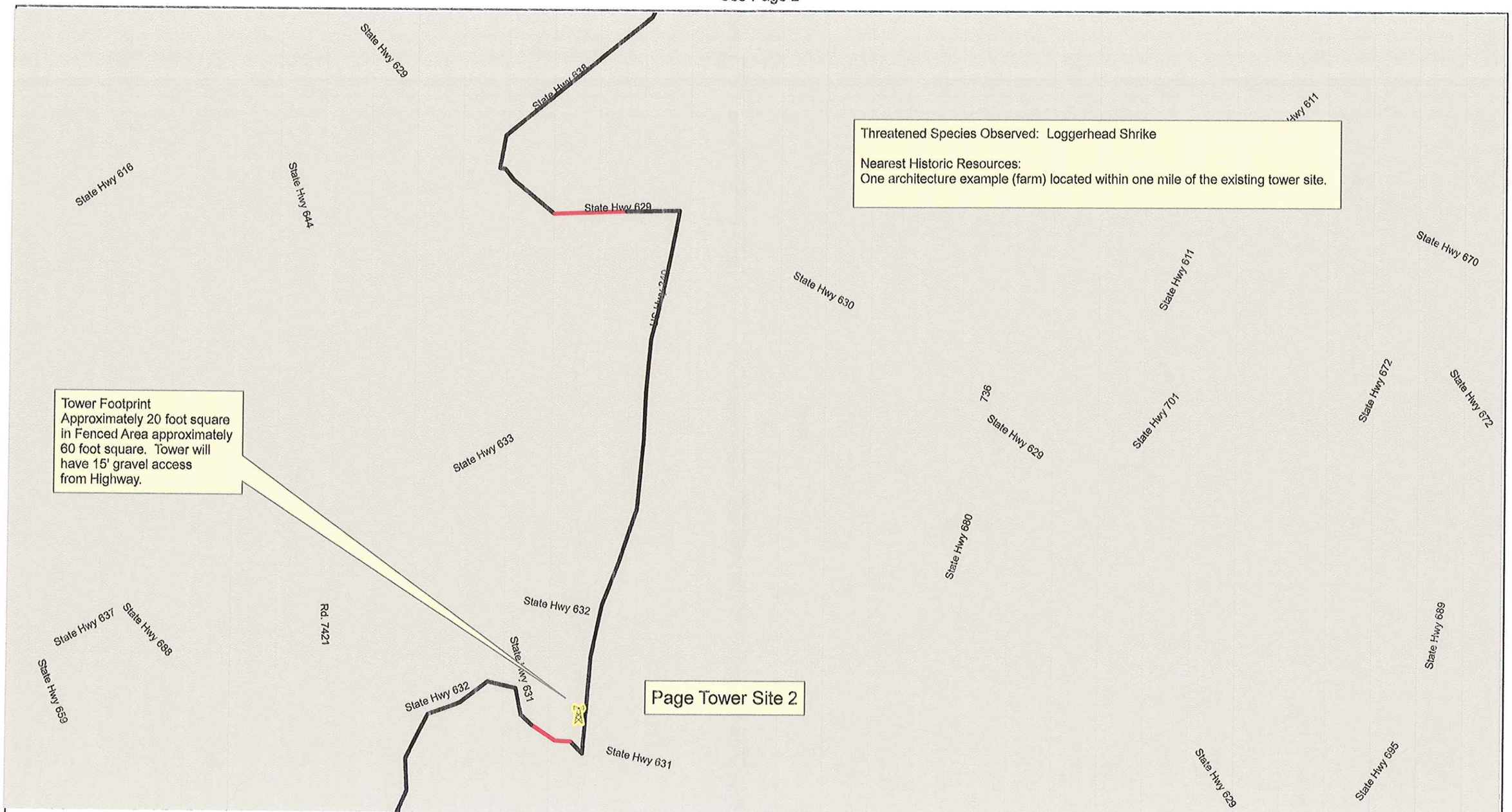
See Page 2



Proposed Middle Mile Infrastructure

Existing Tower — Aerial Fiber

New Tower — Underground Fiber

N

0 0.125 0.25 0.5 Miles

Scale 1:24,000

See Page 5

All Fiber Optic Cable on State, County or Federal Road Right of Way except for access to Tower Site. Underground Cable will require approximately three foot wide by 30" deep or less opening. Aerial Fiber will be placed on existing utility pole lines unless otherwise noted.

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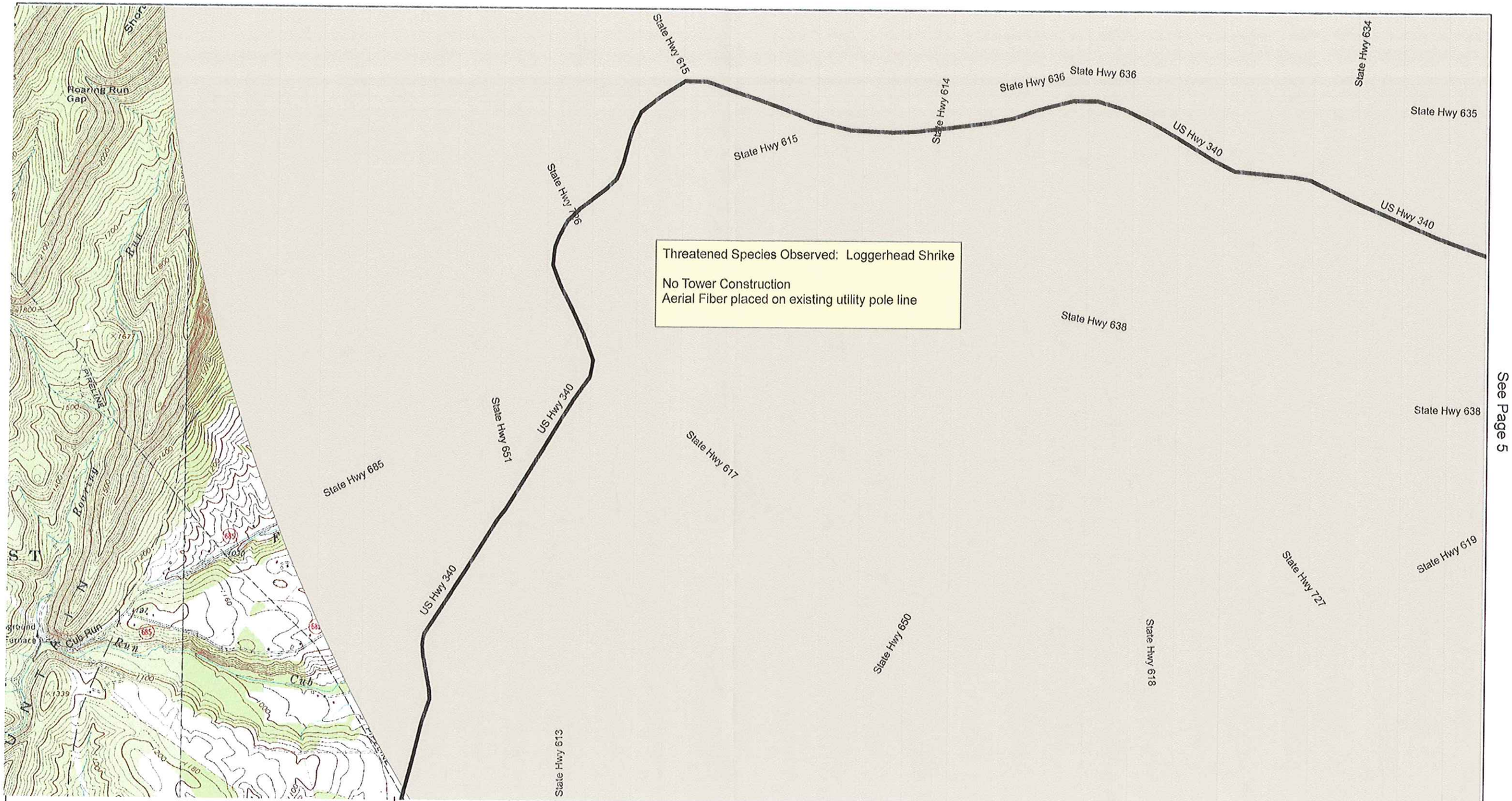
Woodstock, Georgia 30189



See Page 5

Proposed Middle Mile Infrastructure

- Existing Tower
- Aerial Fiber
- New Tower
- Underground Fiber

N

0 0.125 0.25 0.5 Miles

Scale 1:24,000

See Page 6

All Fiber Optic Cable on State, County or Federal Road Right of Way except for access to Tower Site. Underground Cable will require approximately three foot wide by 30" deep or less opening. Aerial Fiber will be placed on existing utility pole lines unless otherwise noted.

Prepared by:

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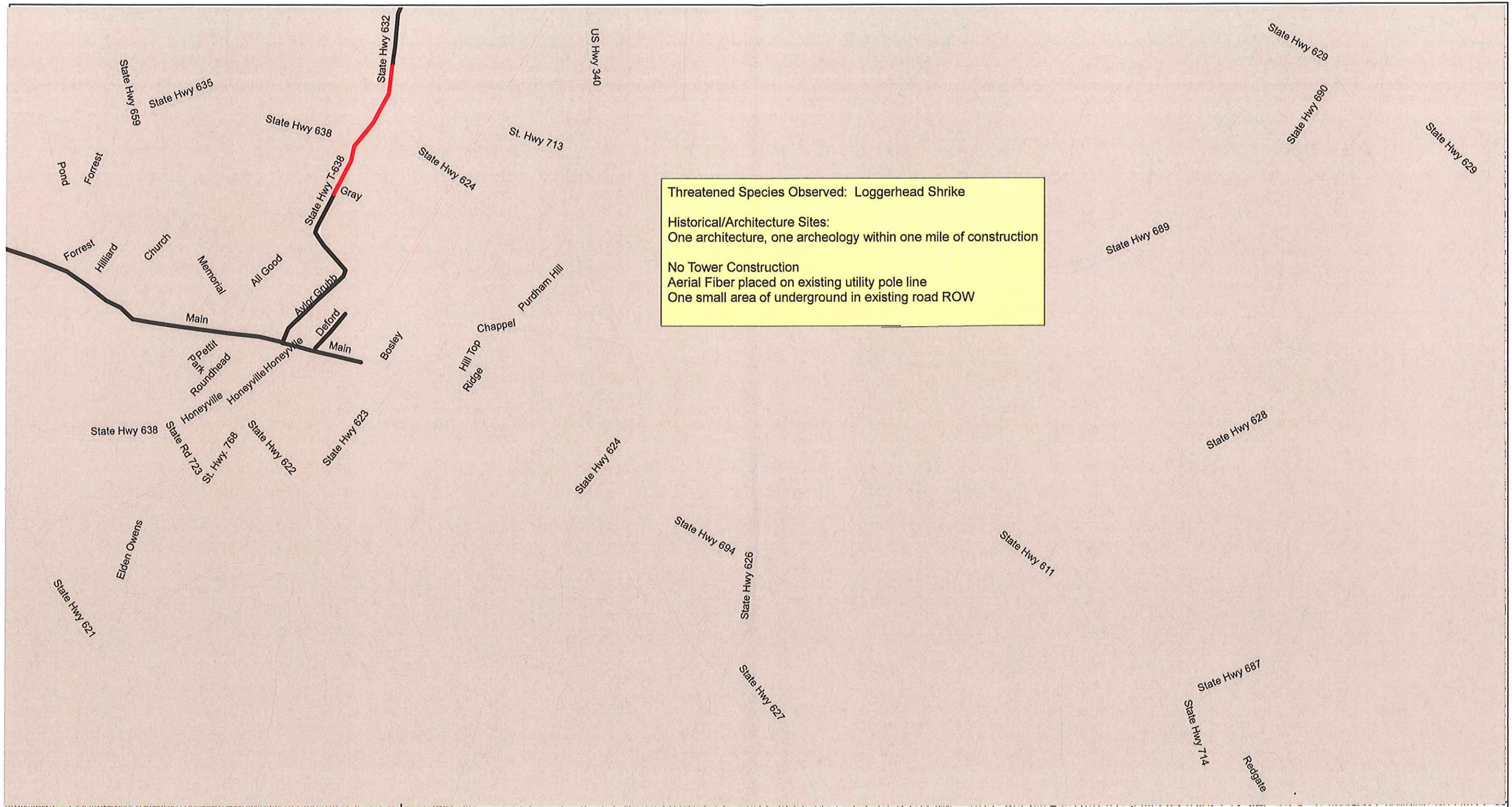
A Division of Icon Engineering, Inc.
6745 Bells Ferry Road
Woodstock, Georgia 30189

See Page 3

See Page 4



Threatened Species Observed: Loggerhead Shrike

Historical/Architecture Sites:
One architecture, one archeology within one mile of construction

No Tower Construction
Aerial Fiber placed on existing utility pole line
One small area of underground in existing road ROW

Proposed Middle Mile Infrastructure

Existing Tower — Aerial Fiber
New Tower — Underground Fiber

N

0 0.125 0.25 0.5 Miles

Scale 1:24,000

All Fiber Optic Cable on State, County or Federal Road Right of Way except for access to Tower Site. Underground Cable will require approximately three foot wide by 30" deep or less opening. Aerial Fiber will be placed on existing utility pole lines unless otherwise noted.

Prepared on: xx/xx/xx
dgeneralstorageMBWorkingsing20091028

Prepared by:

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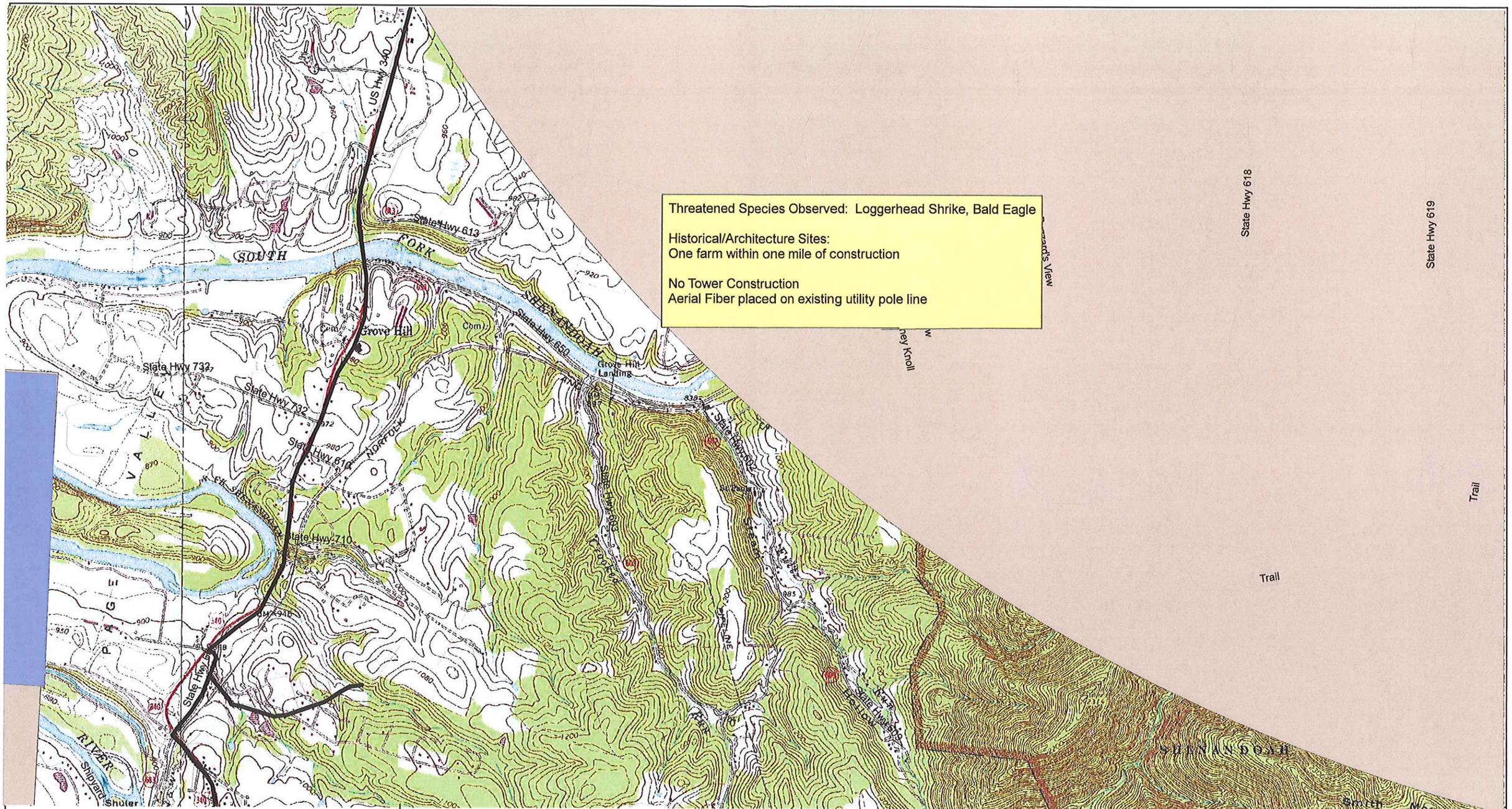
A Division of Icon Engineering, Inc.
6745 Bells Ferry Road
Woodstock, Georgia 30189

See Page 4



Proposed Middle Mile Infrastructure

- Existing Tower
- New Tower
- Aerial Fiber
- Underground Fiber

N

0 0.125 0.25 0.5 Miles

Scale 1:24,000

See Page 7

All Fiber Optic Cable on State, County or Federal Road Right of Way except for access to Tower Site. Underground Cable will require approximately three foot wide by 30" deep or less opening. Aerial Fiber will be placed on existing utility pole lines unless otherwise noted.

Prepared on: xx/xx/xx
dgeneral/storage/MBWorkingsing20091023

Prepared by:

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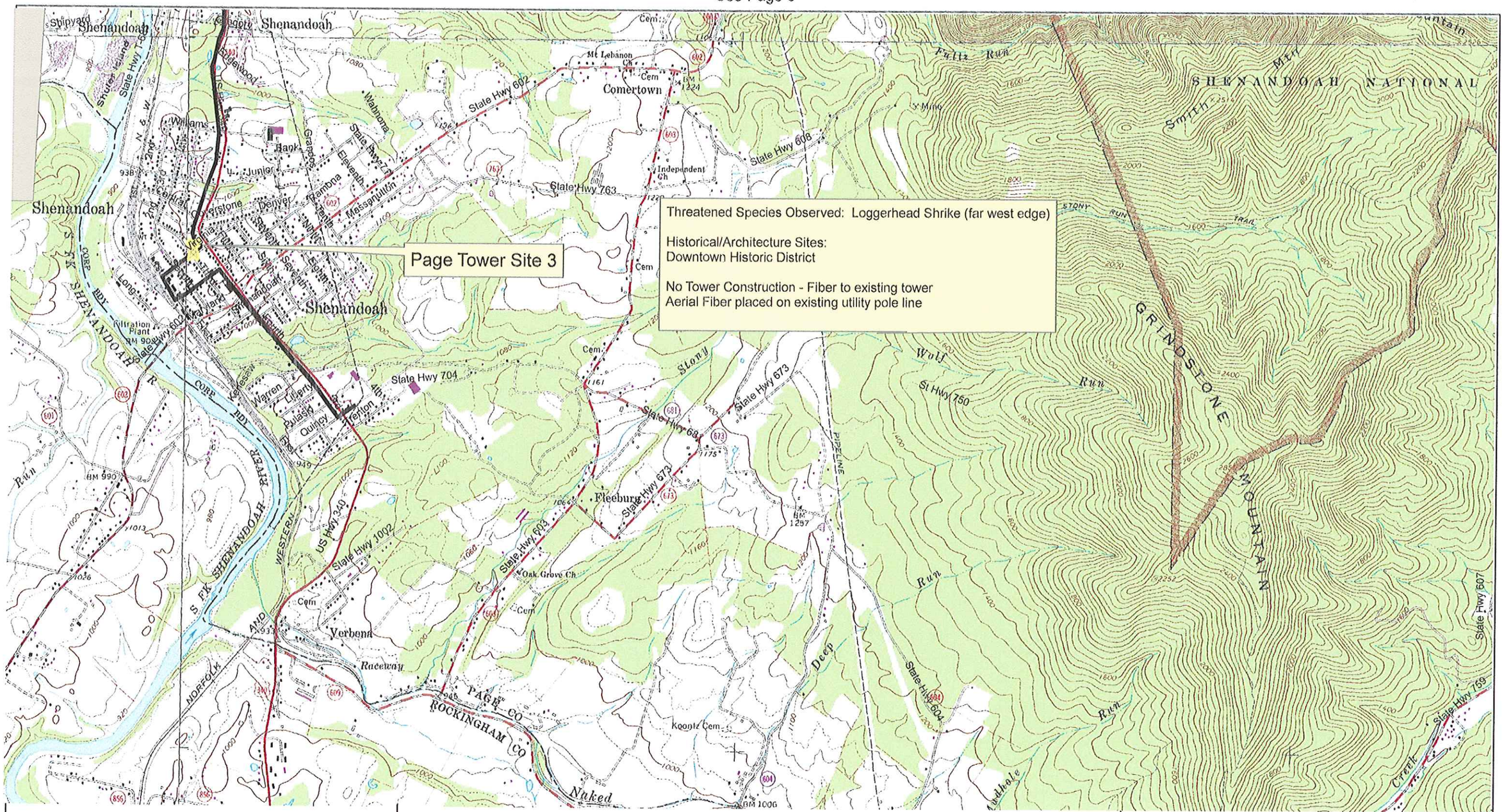
Woodstock, Georgia 30189

See Page 6



Threatened Species Observed: Loggerhead Shrike (far west edge)

Historical/Architecture Sites:
Downtown Historic District

No Tower Construction - Fiber to existing tower
Aerial Fiber placed on existing utility pole line

Proposed Middle Mile Infrastructure

- Existing Tower
- New Tower
- Aerial Fiber
- Underground Fiber

N

0 0.125 0.25 0.5 Miles

Scale 1:24,000

All Fiber Optic Cable on State, County or Federal Road Right of Way except for access to Tower Site. Underground Cable will require approximately three foot wide by 30" deep or less opening. Aerial Fiber will be placed on existing utility pole lines unless otherwise noted.

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Woodstock, Georgia 30189

Page County Broadband Authority
Easy Grants ID 1410

Attachment B: Service Offerings

Service Offering	Distance Band or Point to Point	Minimum Peak Load Network Bandwidth Capacity (Mbps)	Monthly/Yearly Pricing ($)	Other
Community Anchor Tenants	Point-to-Point Local Loop	45 Mb	$1200/Mo	
Municipal Customers	Point-to-point	10 Mb	$100/Mo	
Small Businesses	Point-to-Point	Up to 50 Mb	$30/Mo (network access for private provider utilizing Page County network)	
Wireless Customers	Point-to-Point Backhaul	As needed	$3/customer/mo	
Dark Fiber Lease	2 fibers		$693/fiber pair/year	

21. Attachment C: Existing Broadband Service Providers and Services Offered:

	Page County Broadband Middle Mile Solution						
Service Area	Middle Mile Services Provider	Technology Platform	Service Tier	Point-to-Point	Minimum Peak Load Network Bandwidth Capacity	Pricing	Other Comments
Service Area 1/ Census community 1	**None**		Entry Level Plan				
			Highest Speed Plan				
			Other Plans (e.g., Mid-Tier Plan)				
	None		Entry Level Plan				
			Highest Speed Plan				
			Other Plans (e.g., Mid-Tier Plan)				
			Highest Speed Plan				
			Other Plans (e.g., Mid-Tier Plan)				
	None		Entry Level Plan				
			Highest Speed Plan				
			Other Plans (e.g., Mid-Tier Plan)				

Question 47

The Page County Broadband Authority is a political subdivision of county government and was set up specifically to set direction, policy and oversee the implementation of a fiber network in this region. There have been no financial transactions to date and hence no financial statements have been prepared.

Pa County Broadband Authority
Easy Grants ID 1410

ATTACHMENT H – Broadband Subscriber Estimates

Household Subscribers	YEAR 0	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
		Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4
1-5 Mbps wireless (backhaul only)									25	25	25	25	25	25	25	25	25	25	25	25	25
Net add-ons									25	50	75	100	125	150	175	200	225	250	275	300	325
Cumulative subscribers																					

Business Customers	Year 0	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
		Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4
45 Mbps or more as needed (high reliability anchor customers									3	0	0	0	0	0	0	0	0	0	0	0	0
Net add-ons									3	3	3	3	3	3	3	3	3	3	3	3	3
Cumulative subscribers																					
Up to 25 Mb Service (private provider access to Page County network)								20	34	8	0	0	0	8	0	0	0	0	0	0	0
Net add-ons								20	54	62	62	62	62	62	62	62	62	62	62	62	62
Cumulative subscribers																					

Strategic Institution	YEAR 0	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
		Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4
10 Mb Service (or higher as needed)—Municipal Customers, Fire Police									10	19	0	0	0	0	0	0	0	0	0	0	0
Net add-ons									10	29	29	29	29	29	29	29	29	29	29	29	29
Cumulative subscribers																					

Block denotes project implementation.
No new subscribers during this period.

SUBSCRIBER PROJECTION TABLE AND RATE PLANS
VOICE SERVICES

COMPLETE THE CHART BELOW FOR EACH PROPOSED FUNDED SERVICE AREA. FOR ALL OTHER SERVICE AREAS, PLEASE PREPARE A CHART THAT AGGREGATES THIS INFORMATION

THIS PROJECT WILL NOT BE OFFERING VOICE SERVICES AND THEREFORE THIS TABLE IS NOT APPLICABLE TO THE SUBMISSION.

	Census Community	Year 1		Year 2		Year 3		Year 4		Year 5	
		Res	Bus	Res	Bus	Res	Bus	Res	Bus	Res	Bus
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
TOTAL											

Rates:
Residential Service:
Business Service:
Other (Specify):

Note: Complete a separate table for each service area.

VIDEO SERVICES
SUBSCRIBER PROJECTS AND RATE PLANS

COMPLETE THE CHART BELOW FOR EACH PROPOSED FUNDED SERVICE AREA. FOR ALL OTHER SERVICE AREAS, PLEASE PREPARE A CHART THAT AGGREGATES THIS INFORMATION

THIS PROJECT WILL NOT BE OFFERING VIDEO SERVICES THEREFORE THIS TABLE IS NOT APPLICABLE TO THE SUBMISSION.

	Census Community	Year 1			Year 2			Year 3			Year 4			Year 5		
		Pkg 1	Pkg 2	Other	Pkg1	Pkg 2	Other	Pkg 1	Pkg 2	Other	Pkg 1	Pkg 2	Other	Pkg 1	Pkg 2	Other
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
TOTAL																

Rates:

Package 1: (ex. 150 basic channels / $35)

Package 2:
(ex. 150 basic channels and Premium / $60)

Other (Specify):

Note: Complete a separate table for each service area. Column headings should be changed to reflect the name of the service package to be offered. Additional columns may

PAGE COUNTY BROADBAND AUTHORITY
EASY GRANTS ID 1410

ATTACHMENT E – PROJECT PLAN (KEY PHASES AND MILESTONES TO DEMONSTRATE DEGREE OF COMPLETION)

- Use the following table to list the major network build-out phases and milestones that can demonstrate that your entire project will be substantially complete by the end of Year 2 and fully complete by the end of Year 3. This is to be done at the aggregate level (combining all proposed funded service areas.)
- Indicate how the milestones listed below will demonstrate these completion objectives. The applicant should consider such project areas as: a) network design; b) securing all relevant licenses and agreements; c) site preparation; d) equipment procurement; e) inside plant deployment; f) outside plant deployment; g) equipment deployment; h) network testing; i) network complete and operational. The applicant may provide any other milestones that it believes showcase progress.
- Project inception (Year 0) starts at the date when the applicant receives notice that the project has been approved for funding.
- In the table, provide any information (e.g., facts, analysis) to: a) demonstrate the reasonableness of these milestones; b) substantiate the ability to reach the milestones by the quarters indicated.
- On a separate sheet, describe the key challenges, if any, to a timely completion of the project, including any applicable mitigation plans.

Time Period	Quarter	List All Relevant Milestones	Support for Reasonableness/Data Points
Year 0	-	Receive Project Funding • Project Inception	•
Year 1	Qtr. 1	• Authorization to proceed with design • Start Strand Mapping of Fiber • Design Consulting on Project • Meetings with Pole Owners • Meetings with DOT	•
	Qtr. 2	• Continue Strand Mapping and Make-Ready Recommendations • Start RFP Development • Complete Permitting Drawings • Finalize Tower Sites	• Project Mileston—Completion of Strand Mapping and Make-Ready allows Utilities to evaluate and let contracts for make-ready construction

	Qtr. 3	• Continue RFP Development • Start Detailed Design • Finish Strand Mapping • Submit Detailed Make-Ready Recommendations to Utilities • Issue RFPs for Electronics	• Same as above

PAGE COUNTY BROADBAND AUTHORITY
EASY GRANTS ID 1410

	Qtr. 4	• Finish Detailed Design Drawings • Select and Order Networking Gear and Some Cable and other Materials • Issue Permit Drawings to DOT • Receive DOT approval • Start Make-Ready Construction • Award Construction Contracts	• Project Milestone—DOT approval allows for start of Aerial Cosntruction • DOT Approval allows start of UG construction
Year 2	Qtr. 1	• Finish Make-Ready Construction • Start Aerial and Underground Construction • Purchase Remaining Materials • Set Hut and Towers	
	Qtr. 2	• Install Central Office Networking Gear • Continue Outside Plant Construction • Install First ONT to County facility	• Construction Schedule is believed to be conservative. Under optimum conditions construction could be completed by one aerial crew in 20-30 days; UG in 20-30 days. Three month schedule allows for problems associated with winter or other conditions; also delays in approvals
	Qtr. 3	• Finish Outside Plant Construction • Continue Network Startup • Finish ONT installation	• Milestone—Conmpletion of Outside plant fiber signals end to major construction; • Mileston—Network Operational
	Qtr. 4	• Cosntruction Contract Closeouts • Final Testing	•
	Qtr. 1	•	•
	Qtr. 2	•	•

PAGE COUNTY BROADBAND AUTHORITY
EASY GRANTS ID 1410

Year 3	Qtr. 3	•	•
	Qtr. 4	•	•

The key challenges to this project will come from potential delays associated with:

- Delays in obtaining approvals from electric utilities to utilize their poles for attachments
- Potential delays associated with environmental assessments

We have attempted to minimize these potential issues by using conservative scheduling and placing towers and other infrastructure only in previously disturbed earth or along DOT rights of way. By producing a doable two year schedule, the project has the fourth quarter year two to utilize should unexpected delays occur.

ATTACHMENT E (CONTINUED) – BUILD-OUT TIMELINE

Complete the following schedule for each proposed funded service area (or, if a middle mile project, for each last mile service area) to indicate the planned build-out in terms of: 1) the requested infrastructure funds; and 2) the entities passed. Entities passed include households, businesses, and "strategic institutions" comprised of critical community facilities, community anchor institutions, and public safety entities. In addition, please complete a separate schedule that aggregates all projected broadband subscribers within the proposed funded service area (or if a middle mile project, for each last mile service area). For BIP only, please include this information for the non-funded service areas as well.

Service Area	Rileyville-Shenandoah																				
		YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
	YEAR 0	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4
Infrastructure Funds																					
Infrastructure Funds Advanced (estimate)		13	31	76	395	930	314	291	18												
Percentage of Total Funds		1	2	4	19	45	15	14	1												
Entities Passed & %																					
Households						314	942	5966	6280												
Percentage of Total Households						5	15	95	100												
Businesses						37	111	707	745												
Percentage of Total Businesses						5	15	95	100												
Strategic Institutions (Comm. Anchor, Public Safety, etc)							11	42	53												
Percentage of Total Institutions							20	80	100												

PAGE COUNTY BROADBAND AUTHORITY
EASY GRANTS ID 1410

Attachment E continued: Aggregate Projected Broadband Subscribers

Service Area	Institutions	Businesses	Households	Total
Luray Town	23	198	1312	1522
Luray Area	1	71	166	141
Rileyville	1	17	492	564
Shenandoah Town	9	95	656	760
Shenandoah Area	4	77	533	614
Stanley Town	8	90	615	713
Stanley Area	7	47	328	382

Question 34.

Challenges to the Project

It is anticipated that there could be a maximum of three challenges to the project:

1) Availability of equipment. Management will ensure that design engineers are early and punctual in their process to identify the equipment needed and provide a detailed list of equipment suppliers that can be informally contacted during the design process;
2) Availability of contractors. Management has already begun to identify contractors suitable to perform the job in this region and as soon as the grant is awarded contracts will be put in place;
3) Pole acquisition to string the fiber. Management has already made contact with the current owner of the poles and is prepared to finalize negotiations once funding is secured.

Pg-35. Service Metric: For BIP applicants only, the applicant must provide a description of measurable service metrics and target service level objectives (SLOs) (e.g., the speed with which new service will be established, service availability, and response time for reports of system failure at a residence) that will be provided to the customer, and a description of the approach and methodology for monitoring ongoing service delivery and service quality for the services being employed.

This question is not applicable to Step 1.

Key Metrics Dashboard
Middle Mile Project
Version 20091230 1.0

Applicant Profile	
Applicant Name	**Dr. Tom Cardman on behalf of the Page County Broadband Authority**
Title	**County Administrator**
EasyGrant ID	**1410**
Headquarters	**Luray, Virginia**
Size (2008 Data) of Sponsoring Entity	• Current Year Revenues: **Not Applicable** • Employees: **150**
Technology Type	**Middle Mile Infrastructure: Fiber primarily aerial with some underground, Wireless Towers**
Key Partners	**Page County, Page County Broadband Authority, Public Schools, Page Memorial Hospital**

Project Economics		Project Financials	
Budget Information		Project Revenues (Yr 5)	**$123,210**
Capital Budget	**$2,061,176**	Net Income and Margin (Yr 5)	**($85,824) Margin -.696**
Federal Contribution (%)	**$1,648,941 (80%)**	EBITDA and Margin (Yr 5)	**$45,011 Margin .365**
Cash Match Amount (%)	**$ 412,235 (20%)**	Rate of Return (w/o BTOP Funds)	BTOP to fill
In Kind Match Amount (%)	**0**	Rate of Return (w/ BTOP Funds)	BTOP to fill
Cost Efficiency		Debt to Assets Ratio (Year 5 – for project)	**.03**
Cost per Mile (MM)	**$52,581**		

Market Territory	
Geographic Area(s)	**<List>**
Total Proposed Network Miles	• Total Miles: **39.2** • Backbone Miles: **39.2** • Lateral Miles: **0** **Note: If using a combination of fiber and microwave, delineate figures in terms of these technology differences.**
New Construction Network Miles	• Total Miles: **39.2** • Backbone Miles: **39.2** • Lateral Miles: **0**
Existing Applicant Network Miles Utilized	• Total Miles: **0** • Backbone Miles: **0** • Lateral Miles: **0**
Leased Network Miles Utilized	• Total Miles: **0** • Backbone Miles: **0** • Lateral Miles: **0**
Underserved/Unserved	• Proposed Backbone Miles in Underserved/Unserved Areas: **39.2** • Proposed Lateral Miles in Underserved/Unserved Areas: **0**

Key Metrics Dashboard
Middle Mile Project
Version 20091230 1.0

Existing Residential/Individual Customers within PFSA	**0**
Existing Business Customers within PFSA	**0**
Existing Last Mile Service Provider Customers within PFSA	**Comcast, Embarq and Rural Broadband Network Services (RBNS) all serve in differing and limited areas of the county. Shentel provides cellular service in the County but not mobile/fixed data access.**
Existing Anchor Institution Customers within PFSA	**0**
Proposed Network Speed	• Backbone: **2 Gbps** • Laterals: **0**
Total Points of Interconnection (Network Access Points)	• Total PoI's: **59** • PoI's in Underserved/Unserved Areas: **59 (100%)**
Market Potential Households (based on population in areas with a point of interconnection)	• Total HH's: **6,280** • HH's Located in Underserved/Unserved Areas: **6,280 (100% of Total HH's)**
Market Potential Businesses based on population in areas with a point of interconnection)	• Total Businesses: **745** • Businesses Located in Underserved/Unserved Areas: **745 (100% of Total Businesses)**
Market Potential Anchor Institutions (or Strategic Institutions)	• Total AI's: **53** • AI's Located in Underserved/Unserved Areas: **53 (100% of Total Anchor Institutions)**
Anchor Institutions Directly Connected (via BTOP Funds by end of Year 3)	• Total Directly Connected AI's: **29** • Located in Underserved/Unserved Areas: **29 and 100%**
Last Mile Providers (based on those located in last mile service areas with a point of interconnection)	• Total Last Mile Providers in Service Areas: **3 total (varies by area)** • Last Mile Providers Expressing Commitment or Letter of Interest: **3** • Last Mile Providers Serving Underserved/Unserved Areas: **3 and 100%**
Customers by Year Five	**Directly Served by Applicant** • Anchor Institutions: **29** • Homes: **0** • Businesses: **0** • Last Mile Service Providers: **1 (dark fiber lease connection)** **Directly Served by Last Mile Provider** • Anchor Institutions: **24** • Homes: **6,280 potential** • Businesses: **745 potential**

Other	
Jobs Created	Please refer to this website for calculation: http://www.whitehouse.gov/administration/eop/cea/Estimate-of-Job-Creation/ • **Direct Jobs: 10** • **Indirect Jobs: 4.4** • **Induced Jobs: 8.1**
Required Time for Project Completion (Number of Required Quarters to Fully Build-out and Test Network and Make Ready for Commercial Service)	**8**

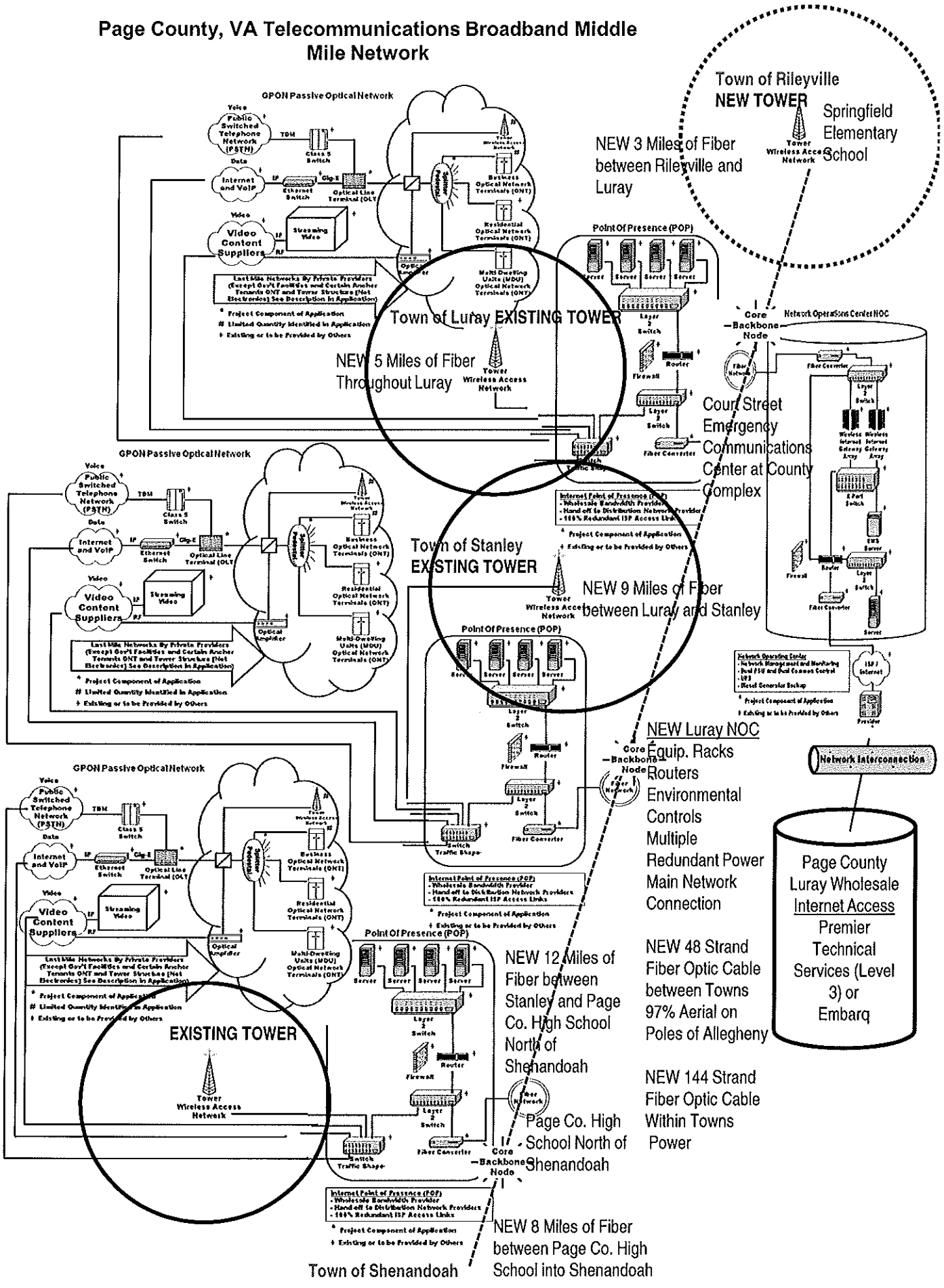
NOTES:

Existing Customers: The proposed network is a new municipal venture. There are no existing customers. All proposed subscribers are included in the market potential.

Market Potential: The numbers in the application were developed using conservative estimates of the coverage area provided by wireless partners using this middle mile infrastructure. The estimated wireless coverage areas were overlaid with actual housing data (census and GIS) to come up with estimated numbers of households which could be served. These numbers are conservatively less than the total numbers which would be obtained using the RUS mapping tools. As this is a middle mile network, not every home in each census block need receive service. Furthermore, the RUS tool did not allow for as precise identification of service area as the GIS mapping software used to develop the network design and business plan.

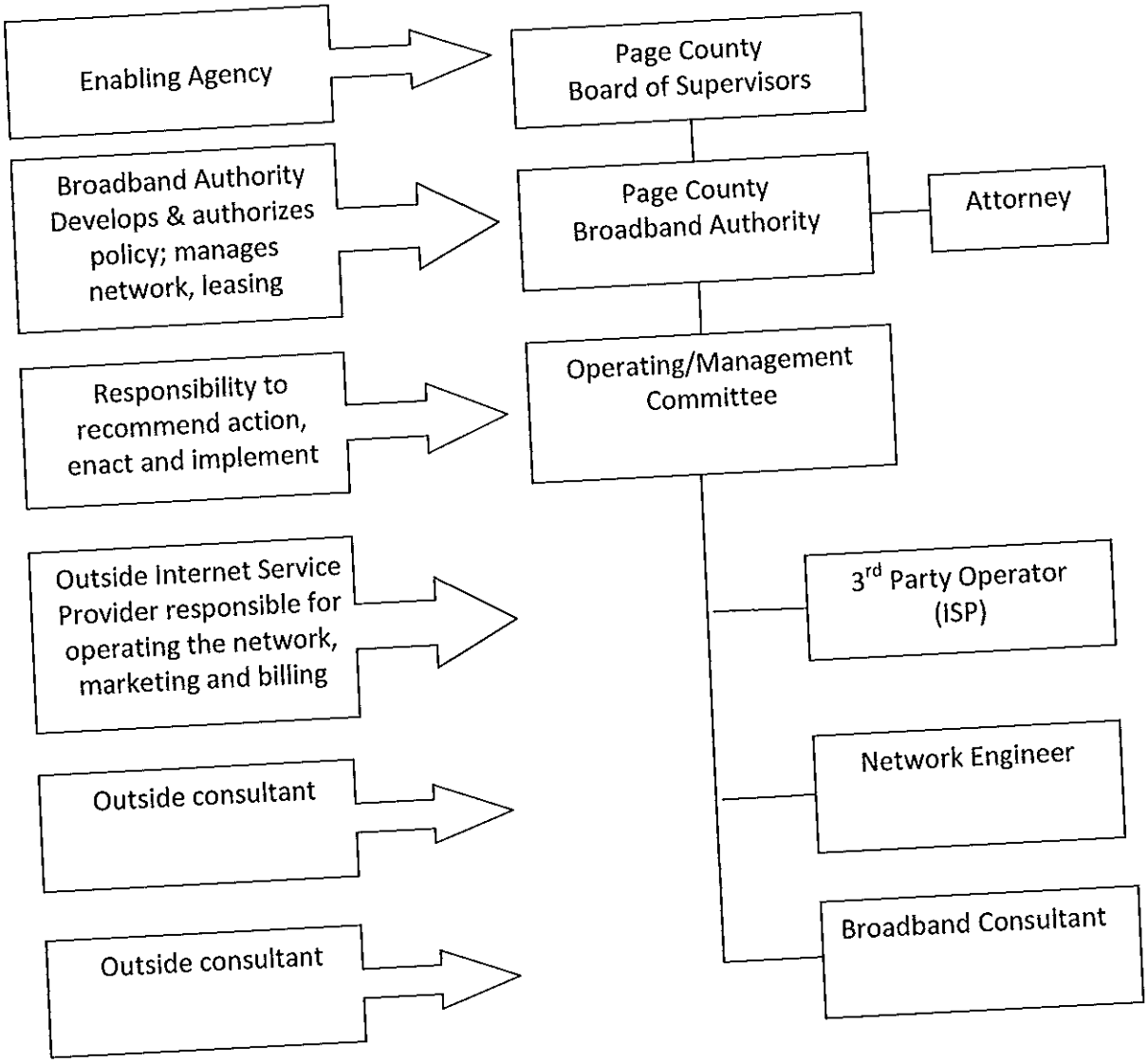
Customers By Year 5: Page County does not intend to provide services directly, other than providing WAN services to county facilities. The numbers of households and businesses served by Year 5 above reflect only those within the last mile wireless service areas (5). 794 households and 208 businesses are passed by the fiber backbone. Page County's leased access revenue estimates are conservatively based on the subscribers (residential/business) located only in the wireless last mile service areas (5).

Page County, VA Telecommunications Broadband Middle Mile Network



ORGANIZATION CHART

PAGE COUNTY BROADBAND AUTHORITY



The senior management and project team is composed of individuals with strong professional backgrounds in critical areas such as project management, strategic planning, contract negotiation, finance and accounting, telecommunications, project financing, construction, personnel management, media relations and organizational development.

Dr. Tom Cardman

- 30 years of management experience for projects requiring government grant and fund accounting
- Senior management responsibility of over 180 million dollars of construction and infrastructure projects.
- Director for Economic Development Page County Virginia and Assistant County Administrator
- Executive Director Page County Broadband Authority
- Masters Degree in Public Administration, Rockefeller School of Public Administration
- Bachelors Degree, State University of NY, Albany
- PhD in Finance, Florida State University

David P. McClure

- President and Chief Executive Officer of the US Internet Industry Association, the primary US trade association for Internet commerce, content and connectivity
- Experience as a Cold Warrior with Strategic Air Command as B-52 Bomber pilot and later as public affairs officer
- Jefferson Award for design of communications programs for armed services
- Worked on variety of technology programs including NASA Space Shuttle
- Six years as a network engineer
- Written and lectured extensively on management and technology issues and is considered an authority on strategic business planning and technology integration for business
- Writes regular column and podcasts for the CPA Technology Advisor and contributes to Accounting Today and Accounting Technology magazine
- Bachelor of Science degree in applied science, University of Iowa (1973)
- MBA in executive management, Kent State University (1983)
- Post-graduate work in organizational development
- Graduate of Defense Information School and Karras curriculum in negotiations

C. Ronald Keyser

- Have owned and operated plumbing business for 14 years. Experience includes developing bids, negotiating and securing contracts, overseeing bookkeeping and accounting activities, management of personnel

- Worked for 20 years in computer industry. Most assignments were in Secret or Top Secret environment for Department of Defense. Responsibilities included gathering

requirements for DoD clients, designing computer systems and programs as per specified requirements, project management including overseeing all the activities of other programmers and developers.

Sara Levinson

- Five years as Chief Operating Officer for a 30-person consulting firm specializing in project financing for technology-driven firms. Responsible for hiring and training consultants and overseeing their work which involved an average of 80 concurrent client projects
- 8 years as Vice-President of television production firm. Responsible for general management, accounting, negotiating distribution agreements, private investment and personnel contracts.
- Restructured finance and accounting system for an international non-profit organization
- Have owned consulting firm for 15 years, specializing in working with growing firms and organizations. Areas of expertise include strategic planning, securing financing, organizational structuring and establishing strategic alliances.
- 3 years as Executive Director of international charitable organization with 125 offices in US, Canada and Europe
- Experience in establishing strategic alliances has included setting up business networks involving up to 14 partners
- Bachelor of Arts in Economics, graduated with Distinction, Concordia University (1982)
- MBA, specializing in operations and accounting, University of Western Ontario (1984)

MICHAEL BOWERS, P.E.,
PRESIDENT
Icon Broadband Technologies
Division of Icon Engineering, Inc.

Mr. Bowers is a licensed professional engineer with almost thirty years experience in the areas of modeling, process design engineering, consulting, and testing. He is a co-founder of Icon Engineering, Inc., the parent company, and now supervises engineering work and develops the economic analyses that play a major part in feasibility studies. Mr. Bowers performs network engineering and conceptual and detailed fiber optic network designs, working closely with vendors and experienced design and construction companies to keep abreast of current technologies, techniques and costs. Mr. Bowers holds a B.S. in Chemical Engineering and a M.S. in Materials Science and Engineering from the University of Florida. Mr. Bowers is a Registered Professional Engineer in many states including Virginia.

JUDY BENTLEY
VICE PRESIDENT
Icon Broadband Technologies
Division of Icon Engineering, Inc.

Ms. Bentley has over twenty-five years experience in IT training, management and support, previously serving as the Director of Training and Support for with a large national firm. Within Icon she functions as both a Project Manager on many matters as well as the leading technical professional on market surveys and research. Her duties include holding detailed discussions with potential telecommunications partners and assisting in the development of market strategies for clients. Her skill set includes a high level understanding of current and near future technologies in the telecommunications and broadband arena. She is conversant in the use of both the business and engineering oriented software that is used extensively by Icon while working with clients, including GIS mapping in ESRI ArcMap.

MICHAEL CLARK
Senior Network Design Specialist, Icon Broadband Technologies
Telecommunications Engineering and Design

Mr. Clark is a telecommunications design specialist with over 30 years experience in the industry; 25 years of fiber and coaxial cable engineering experience in the cable industry with the former TeleCommunications, Inc. (TCI), and more recently designing all-fiber networks for municipalities. Mr. Clark is familiar with all phases of aerial and underground construction, fiber infrastructure and fiber design practices. He has been involved in the design of a number of municipal fiber projects, both PON and active Ethernet, from both the detailed design and management perspective.

KEITH HILL, P.E.
PRESIDENT
Consulting Gateway Corporation

Mr. Hill's combined experiences as Manager for 12 years of a municipality with electric, water, wastewater, solid waste and telecommunications services, combined with his 14 years experience in providing utility, management and construction related engineering and consulting services allows Mr. Hill to bring both a public and private perspective to a project. Mr. Hill has a Bachelor of Science degree in Construction Engineering and is a Professional Engineer licensed in Virginia. His work experience includes projects ranging from assessment studies, design and construction management services for community private and open access fiber optics and wireless networks; planning of city and regional E911 and Emergency Operations Centers; development of bidding documents and specifications and project management services. Mr. Hill's special consulting emphasis in the development and application of Telecommunications and IT services is unique, addressing the many complex and critical components.

OMB Approval No. 4040-0009
Expiration Date 07/30/2010

ASSURANCES - CONSTRUCTION PROGRAMS

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0042), Washington, DC 20503.

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the Awarding Agency. Further, certain Federal assistance awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance, and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project costs) to ensure proper planning, management and completion of the project described in this application.

2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, the right to examine all records, books, papers, or documents related to the assistance; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.

3. Will not dispose of, modify the use of, or change the terms of the real property title, or other interest in the site and facilities without permission and instructions from the awarding agency. Will record the Federal awarding agency directives and will include a covenant in the title of real property acquired in whole or in part with Federal assistance funds to assure non-discrimination during the useful life of the project.

4. Will comply with the requirements of the assistance awarding agency with regard to the drafting, review and approval of construction plans and specifications.

5. Will provide and maintain competent and adequate engineering supervision at the construction site to ensure that the complete work conforms with the approved plans and specifications and will furnish progress reports and such other information as may be required by the assistance awarding agency or State.

6. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.

7. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.

8. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).

9. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.

10. Will comply with all Federal statutes relating to non-discrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681 1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) underwhich application for Federal assistance is being made; and, (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.

11. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal and federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.

12. Will comply with the provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

13. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333) regarding labor standards for federally-assisted construction subagreements.

14. Will comply with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is $10,000 or more.

15. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).

16. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.

17. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq).

18. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-1 33, "Audits of States, Local Governments, and Non-Profit Organizations."

19. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.

*SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL	*TITLE Chairman
*APPLICANT ORGANIZATION Page County Broadband Authority	*DATE SUBMITTED August 6, 2009

U.S. DEPARTMENT OF COMMERCE

FORM CD-511
(REV 1-05)

CERTIFICATION REGARDING LOBBYING

Applicants should also review the instructions for certification included in the regulations before completing this form. Signature on this form provides for compliance with certification requirements under 15 CFR Part 28, "New Restrictions on Lobbying." The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of Commerce determines to award the covered transaction, grant, or cooperative agreement.

LOBBYING

As required by Section 1352, Title 31 of the U.S. Code, and implemented at 15 CFR Part 28, for persons entering into a grant, cooperative agreement or contract over $100,000 or a loan or loan guarantee over $150,000 as defined at 15 CFR Part 28, Sections 28.105 and 28.110, the applicant certifies that to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress in conncection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying." in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure occurring on or before October 23, 1996, and of not less than $11,000 and not more than $110,000 for each such failure occurring after October 23, 1996.

Statement for Loan Guarantees and Loan Insurance

The undersigned states, to the best of his or her knowledge and belief, that:

In any funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

Submission of this statement is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required statement shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure occurring on or before October 23, 1996, and of not less than $11,000 and not more than $110,000 for each such failure occurring after October 23, 1996.

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above applicable certification.

NAME OF APPLICANT Page County Broadband Authority	AWARD NUMBER AND/OR PROJECT NAME Page BBA BroadBand Proje
PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE BERNIE MILLER CHAIRMAN	
SIGNATURE Bernard P. Miller	DATE August 6, 2009

Approved by OMB
0348-0046

Disclosure of Lobbying Activities

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352
(See reverse for public burden disclosure)

1. Type of Federal Action: a. contract ____ b. grant c. cooperative agreement d. loan e. loan guarantee f. loan insurance	**2. Status of Federal Action:** a. bid/offer/application ____ b. initial award c. post-award	**3. Report Type:** a. initial filing ____ b. material change **For material change only:** Year _____ quarter _____ Date of last report_____
4. Name and Address of Reporting Entity: ____ Prime ____ Subawardee Tier_____, if Known: PAGE COUNTY DOES NO LOBBYING AND DOES NOT EMPLOY LOBBYISTS **Congressional District,** *if known:*	**5. If Reporting Entity in No. 4 is Subawardee,** Enter Name and Address of Prime: **Congressional District,** *if known:*	
6. Federal Department/Agency:	**7. Federal Program Name/Description:** CFDA Number, *if applicable*: _____	
8. Federal Action Number, *if known:*	**9. Award Amount,** *if known:* $	
10. a. Name and Address of Lobbying Registrant *(if individual, last name, first name, MI):*	**b. Individuals Performing Services** *(including address if different from No. 10a)* *(last name, first name, MI):*	
11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.	**Signature:** Bernard P. Miller **Print Name:** Bernard P. Miller **Title:** Chairman **Telephone No.:** 540-743-4142 **Date:** 8-12-09	
Federal Use Only	**Authorized for Local Reproduction** **Standard Form - LLL (Rev. 7-97)**	

FORM CD-512
(REV 12-04)

U.S. DEPARTMENT OF COMMERCE

CERTIFICATION REGARDING LOBBYING LOWER TIER COVERED TRANSACTIONS.

...licants should review the instructions for certification included in the regulations before completing this form. Signature ... this form provides for compliance with certification requirements under 15 CFR Part 28, "New Restrictions on Lobbying."

LOBBYING As required by Section 1352, Title 31 of the U.S. Code, and implemented at 15 CFR Part 28, for persons entering into a grant, cooperative agreement or contract over $100,000 or a loan or loan guarantee over $150,000 as defined at 15 CFR Part 28, Sections 28.105 and 28.110, the applicant certifies that to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure occurring on or before October 23, 1996, and of not less than $11,000 and not more than $110,000 for each such failure occurring after October 23, 1996.

Statement for Loan Guarantees and Loan Insurance The undersigned states, to the best of his or her knowledge and belief, that:

If any funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

Submission of this statement is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required statement shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure occurring on or before October 23, 1996, and of not less than $11,000 and not more than $110,000 for each such failure occurring after October 23, 1996.

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the abov... applicable certification.

NAME OF APPLICANT: Page County Broadband Authority

AWARD NUMBER AND/OR PROJECT NAME: Page BBA Broadband Project

PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE: Bernard P. Miller Chairman

SIGNATURE: Bernard P. Miller

DATE: 8-12-09

Broadband Infrastructure Application Submission to RUS (BIP) and NTIA (BTOP)

Equal Opportunity and Nondiscrimination Certification

U.S. Department of Agriculture
Broadband Initiatives Program

All loans and grants made under the Broadband Initiatives Program are subject to the nondiscrimination provisions of Title VI of the Civil Rights Act of 1964, as amended, (7 C.F.R. Part 15); Section 504 of the Rehabilitation Act of 1973, as amended, (29 U.S.C. 901 *et seq;* 7 C.F.R. Part 15b); and the Age Discrimination Act of 1975, as amended (42 U.S.C. 6101 *et seq.;* 45 C.F.R. Part 90), and Executive Order 11375, Amending Executive Order 11246, Relating to Equal Employment Opportunity (3 C.F.R. 1966, 1970).

All recipients of financial assistance from Rural Development, the prospective primary participant commits to carry out Rural Development's established policy to comply with the requirements of the above laws and executive orders to the effect that no person in the United States shall, " on the basis of race, color, national origin, handicap, or age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under the Broadband Initiatives Program.

We Page County Broadband Authority (the Applicant) hereby certify that, as a prospective recipient under the said Broadband Initiatives Program, we will comply with the above referenced laws and executive orders.

August 6, 2009
(Date)

(Authorized Representative's Signature)

Bernard P. Miller
Name:

Chairman
Title:

Broadband Infrastructure Application
Submission to RUS (BIP) and NTIA (BTOP)

Certification Regarding Architectural Barriers

U.S. Department of Agriculture
Broadband Initiatives Program

All facilities financed with Rural Development loans that are open to the public, or in which physically handicapped persons may be employed or reside, must be designed, constructed, and/or altered to be readily accessible to, and usable by, handicapped persons. Standards for these facilities must comply with the Architectural Barriers Act of 1968, as amended, 42 U.S.C. §4151 *et seq.)* and with the Uniform Federal Accessibility Standards (UFAS), (Appendix A to 41 C.F.R. subpart 101-19.6).

As a prospective primary participant recipient of financial assistance from Rural Development, this organization commits to carry out Rural Development's established policy to comply with the requirements of the above referenced law to the effect that all facilities must be readily accessible to and usable by handicapped persons.

We, Page County Broadband Authority (the Applicant) hereby certify that, as a prospective recipient under the Rural Broadband Initiatives Program, we are in compliance, or will be in compliance upon completion of the Project, with the above referenced law.

August 6, 2009
(Date)

(Authorized Representative's Signature)

Bernard P. Miller
Name:

Chairman
Title:

Broadband Infrastructure Application Submission to RUS (BIP) and NTIA (BTOP)

Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 Certification

U.S. Department of Agriculture Broadband Initiatives Program

We Page County Broadband Authority (the Applicant) assure the U.S. government that we will comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, 42 U.S.C. §4601 *et seq.*, and with implementing federal regulations in 49 C.F.R. Part 24 and 7 C.F.R. Part 21.

Specifically, we assure that whenever Federal financial assistance is used to pay for any part of the cost of a program or Project which will result in the displacement of any person:

(a) Fair and reasonable relocation payments and assistance shall be provided to or for displaced persons in accordance with sections 202, 203, and 204 of the Uniform Act;

(b) Relocation assistance programs offering the services described in section 205 of the Uniform Act shall be provided to displaced persons; and

(c) Within a reasonable period of time prior to displacement, comparable replacement dwellings will be available to displaced persons in accordance with section 205(c) (3) of the Uniform Act.

August 6, 2009
(Date)

(Authorized Representative's Signature)

Bernard P. Miller
Name:

Chairman
Title:

Broadband Infrastructure Application
Submission to RUS (BIP) and NTIA (BTOP)

Certification Regarding Debarment, Suspension, and Other Responsibility Matters - Primary Covered Transactions

U.S. Department of Agriculture
Broadband Initiatives Program

This certification is required by the regulations implementing Executive Order 12549, *Debarment and Suspension*, 7 C.F.R. § 3017.510, *Participants' Responsibilities.*

(1) We Page County Broadband Authority (the Applicant) (hereinafter the "Company") hereby certify to the best of our knowledge and belief that neither the Company, nor any of its principals:

(a) are presently debarred, suspended, proposed for Debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) have within a 3-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) are presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) have within a 3-year period preceding this Application had one or more public transactions (Federal, State, or local) terminated for cause or default.

(2) If we are unable to certify to any of the statements in this certification, we shall attach an explanation hereto.

August 6, 2009
(Date)

Bernard P. Miller
(Authorized Representative's Signature)

Bernard P. Miller
Name:

Chairman
Title:

Broadband Infrastructure Application
Submission to RUS (BIP) and NTIA (BTOP)

Certification Regarding Lobbying for Contracts, Grants, Loans, and Cooperative Agreements

U.S. Department of Agriculture
Broadband Initiatives Program

We Page County Broadband Authority (the Applicant), the undersigned certify, to the best of our knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on our behalf, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant or loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, we shall complete and submit Standard Form-LLL, Disclosure Form to Report Lobbying, in accordance with its instructions. See http://www.whitehouse.gov/omb/grants/sflllin.pdf for Disclosure Instructions.

(3) We shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. § 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

August 9, 2009
(Date)

Bernard P. Miller
(Authorized Representative's Signature)

Bernard P. Miller
Name:

Chairman
Title:

Network Design and Implementation Plan Certification (to be complete for projects requesting more than $1 million in federal assistance)

U.S. Department of Agriculture and U.S. Department of Commerce
BIP and BTOP Program

We the undersigned, certify that the proposed broadband system will work as described in the System Design and Network Diagram sections, and can deliver the proposed services outlined in the Service Offerings Section. Moreover, the system, as designed, can meet the proposed build-out timeframe based on the resources designated in Project Viability Section, and will be substantially complete in two years, and complete within three years.

08-09-2009
(Date)

(Authorized Representative's Signature)

Bernard P. Miller
Name:

Chairman Broadband Authority
Title:

08-07-2009
(Date)

(Certifying Engineer's Signature)

Michael Bowers
Name:

Engineer,Va PE#0402045364
Title:

MILLER, EARLE & SHANKS, PLLC
Attorneys and Counsellors at Law

NATHAN H. MILLER
J. BURNS EARLE, III
GEORGE WARREN SHANKS
DERRICK W. WHETZEL (VA, WV)

LINDA D. ELLIOTT
MICHAEL W. HELM

560 Neff Avenue, Suite 200
Post Office Box 511
Harrisonburg, Virginia 22803
Telephone: (540) 564-1555
Facsimile: (540) 434-7832
E-Mail: thefirm@harrisonburglaw.com

ELKTON OFFICE
Telephone: (540) 298-8529

LURAY OFFICE
Telephone: (540) 743-4511

August 5, 2009

Administrator
Rural Utilities Service
U. S. Department of Agriculture
Washington, D. C. 20250-1500

Assistant Secretary
National Telecommunications and
Information Administration
U. S. Department of Commerce
Washington, D. C. 20230

Re: Page County Broadband Authority

Dear Sir or Madam:

We are general counsel for the Page County Broadband Authority (the "Applicant"). In such capacity, we acted as counsel to the Applicant in connection with its ability to apply to the Broadband Initiatives Program and the Broadband Technology Opportunities Program and in the review of the grant, as referenced in the Notice of Funds Availability.

We are of the opinion that:

(a) the Applicant is a duly organized and existing corporation under the laws of the Commonwealth of Virginia.

(b) the Applicant has corporate power: (1) to execute and deliver the grant; and (2) to perform all acts required to be done by it under said agreement.

(c) no legal proceedings have been instituted or are pending against the Applicant, the outcome of which would adversely affect the Applicant's ability to perform

the duties under the grant agreement, and there are no judgments against the Applicant which would adversely affect the Applicant's ability to perform the duties under the grant agreement.

Very truly yours,

Nathan H. Miller

Broadband Infrastructure Application
Submission to RUS (BIP) and NTIA (BTOP)

Certification Requirements BTOP

U.S. Department of Commerce
Broadband Technology Opportunities Program

(i) I certify that I am authorized to submit this grant application on behalf of the eligible entity(ies) listed on this application, that I have examined this application, that all of the information and responses in this application, including certifications, and forms submitted, all of which are part of this grant application, are material representations of fact and true and correct to the best of my knowledge, that the entity(ies) that is requesting grant funding pursuant to this application and any subgrantees and subcontractors will comply with the terms, conditions, purposes, and federal requirements of the grant program; that no kickbacks were paid to anyone; and that a false, fictitious, or fraudulent statements or claims on this application are grounds for denial or termination of a grant award, and/or possible punishment by a fine or imprisonment as provided in 18 U.S.C. § 1001 and civil violations of the False Claims Act.

(ii) I certify that the entity(ies) I represent have and will comply with all applicable federal, state, and local laws, rules, regulations, ordinances, codes, orders and programmatic rules and requirements relating to the project. I acknowledge that failure to do so may result in rejection or deobligation of the grant or loan award. I acknowledge that failure to comply with all federal and program rules could result in civil or criminal prosecution by the appropriate law enforcement authorities.

(iii) If requesting BTOP funding, I certify that the entity(ies) I represent has and will comply with all applicable administrative and federal statutory, regulatory, and policy requirements set forth in the DOC Pre-Award Notification, published in the Federal Register on February 11, 2008 (73 FR 7696), as amended; DOC Financial Assistance Standard Terms and Conditions (Mar. 8, 2009); DOC American Recovery and Reinvestment Act Award Terms (April 9, 2009); and any Special Award Terms and Conditions that are included by the Grants Officer in the award."

August 6, 2009
(Date)

Bernard P. Miller
(Authorized Representative's Signature)

Bernard P. Miller
Name:

Chairman
Title:

Certifications and Signature

(i) I certify that I am authorized to submit this grant application on behalf of the eligible entity(ies) listed on this application, that I have examined this application, that all of the information and responses in this application, including certifications, and forms submitted, all of which are part of this grant application, are material representations of fact and true and correct to the best of my knowledge, that the entity(ies) that is requesting grant funding pursuant to this application and any sub-grantees and subcontractors will comply with the terms, conditions, purposes, and federal requirements of the grant program; that no kickbacks were paid to anyone; and that a false, fictitious, or fraudulent statements or claims on this application are grounds for denial or termination of a grant award, and/or possible punishment by a fine or imprisonment as provided in 18 U. S. C. § 1001 and civil violations of the False Claims Act.

(ii) I certify that the entity(ies) I represent have and will comply with all applicable federal, state, and local laws, rules, regulations, ordinances, codes, orders and programmatic rules and requirements relating to the project. I acknowledge that failure to do so may result in rejection or de-obligation of the grant or loan award. I acknowledge that failure to comply with all federal and program rules could result in civil or criminal prosecution by the appropriate law enforcement authorities.

(iii) I certify that the entity(ies) I represent has and will comply with all applicable administrative and federal statutory, regulatory, and policy requirements set forth in the Department of Commerce Pre-Award Notification Requirements for Grants and Cooperative Agreements ("DOC Pre-Award Notification"), published in the Federal Register on February 11, 2008 (73 FR 7696), as amended; DOC Financial Assistance Standard Terms and Conditions (Mar. 8, 2009), the Department of Commerce American Recovery and Reinvestment Act Award Terms (Apr. 9, 2009); and any Special Award Terms and Conditions that are included by the Grants Officer in the award. (iv) If requesting BTOP funding, I certify that the entity(ies) I represent has secured access to pay the 20% of total project cost or has petitioned the Assistant Secretary of NTIA for a waiver of the matching requirement or received a waiver.

Signature of authorized person Bernard P. Miller **Date** December 14, 2009

Print name of authorized person BERNARD P. MILLER

Title or position CHAIRMAN

Certification Requirements for BTOP

U.S. Department of Commerce
Broadband Technology Opportunities Program

I certify that I am the duly authorized representative of the applicant organization, and that I have been authorized to submit the attached application on its behalf. A copy of the applicant organization's authorization for me to submit this application as its official representative is on file in the applicant's office, and I am identified as the applicant organization's Authorized Organization Representative (AOR) in the Central Contractor Registration database. By signing this certification, I certify that the statements contained in the application are true, complete, and accurate to the best of my knowledge, and that if an award is made, the applicant organization will comply with all applicable award terms and conditions.

8-11-09
(Date)

(Authorized Representative's Signature)

THOMAS M. CARPMAN
Name:

EXECUTIVE DIRECTOR BAA
Title:

BROADBAND TECHNOLOGY OPPORTUNITIES PROGRAM
AOR Information

Name of Applicant Organization	PAGE COUNTY BROADBAND AUTHORITY
DUNS Number	83-144-5494
EasyGrants# of Submitted Application	1410
Name of AOR	Page County Broadband Authority
Email Address for AOR	tcardman@pagecounty.virginia.gov
Phone Number for AOR	540-743-4142

BROADBAND TECHNOLOGY OPPORTUNITIES PROGRAM
Federal Request and Match Verification

Name of Applicant Organization Page County Broadband Authority
DUNS Number 83-144-5494
Easy Grants # of Submitted Application ID: 1410

As an Authorized Organizational Represented of the entity listed above, I verify that

(i.) The amounts in the "Grant Request" column from the budget table submitted by the entity I represent in response to Question 44 on page 17 of the Broadband Infrastructure Application completely and accurately reflect the amount of the organization's Federal grant request to NTIA; and

(ii.) The amounts in the "Cash $" and "In-kind $" fields submitted by the entity I represent in response to Question 52 on page 19 of the Broadband Infrastructure Application completely and accurately reflect, respectively, the organization's cash and in-kind matching contributions for the proposed project.

Signature of authorized person Bernard P. Miller Date December 14, 2009
Print name of authorized person BERNARD P. MILLER
Title or position CHAIRMAN

COUNTY OF PAGE

117 South Court Street
Luray, Virginia 22835
(540) 743-4142
Fax: (540) 743-4533

Board of Supervisors:
Tommy R. LaFrance - Chairman-At-Large
Charles M. Hoke - District 1
Larry A. Sours - District 2
J. D. Cave - District 3
Gerald M. Cubbage - District 4
Carol Lee Fischer-Strickler - District 5

County Administrator:
Mark Belton

December 16, 2009

Broadband Technology Opportunities Program
National Telecommunications and Information Administration
U. S. Department of Commerce
HCHB Room 1874
1401 Constitution Avenue, NW
Washington, DC 20230

Gentlemen:

At the December 15, 2009 meeting of the Page County Board of Supervisors, they affirmed their intention to provide a twenty percent match in support of the Page County Middle Mile Project.

Sincerely,

Thomas M. Cardman
(CM)

Dr. Thomas M. Cardman
County Administrator

Broadband Infrastructure Application Submission to RUS (BIP) and NTIA (BTOP)

Environmental Questionnaire

Any project-related activity that may adversely affect the environment must not be undertaken prior to the completion of Rural Utilities Service/National Telecommunication and Information Administration environmental review process. Doing so may jeopardize consideration of your application. All of the following questions must be completed or the application will be considered incomplete. Note: The applicant may submit a copy of any environmental review document that has been prepared in connection with obtaining permits, approvals, or other financing for the proposed project from State, local or other federal bodies. Such material, to the extent relevant, may be used to meet the requirements herein.

i. **Project Description:-** Describe all project-related construction activities, including, but not limited to building construction related to installing pre-fabricated buildings; internal modifications, or equipment additions to buildings or other structures (e.g., relocating interior walls or adding computer facilities); the construction and installation of buried cable; or installation of telecommunications transmission facilities including construction of new monopole towers, satellite dishes. Complete descriptions must be provided for each site affected by project-related construction activities.

ii. **Map:** Include a map for each site affected by construction (recommend U.S. Geological Survey 7.5-minute quadrangle maps at a map scale of 1:24,000; larger scale maps may be provided for site-specific proposals). USGS maps may be obtained and purchased at the following website: http://www.usgs.gov/pubprod/maps.html. If appropriate, photographs or aerial photographs of site-specific proposals may be provided.

iii. **Property Changes:** Describe and indicate the amount of property to be cleared, excavated, fenced, or otherwise disturbed by the project and describe the current land use and zoning for each project site affected by construction including whether the project is proposed to be located on public land owned or managed by the federal government.

iv. **Buildings:** Describe buildings or other structures (i.e., transmission facilities), including dimensions, to be constructed or modified. For linear projects, state whether the project is to be located on or within previously disturbed public rights-of-way.

v. **Wetlands:** Describe and indicate whether wetlands are present on or near the project site(s) affected by construction (maps of wetlands may be obtained from the U.S. Fish and Wildlife Service's National Wetland Inventory website: http://www.fws.gov/wetlands/ or from soil maps obtained from the USDA, Natural Resource Conservation Service's website: http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm).

vi. **Critical Habitats:** Describe and indicate whether any project site(s) include or are near critical habitats or will affect any threatened, endangered or candidate species. Applicants must provide species lists and appropriate specie accounts

obtained from the U.S. Fish and Wildlife Service's website: http://ecos.fws.gov/tess_public/ for each county affected by construction of the project.

vii. **Floodplains:** Describe whether or not any facility(ies) or site(s) are located within a 100 or 500-year floodplain. Information related to floodplains and National Flood Insurance Maps may be obtained from the Federal Emergency Management Agency's (FEMA) website http://www.msc.fema.gov/webapp/wcs/stores/servlet/CategoryDisplay?catalogId=10001&storeId=10001&categoryId=12001&langId=-1&usertype=G&type=1. If any project-related construction activities are within floodplains, a copy of the FEMA, "FIRMette" with construction activities depicted on the map must be included. For obtaining FIRMettes review the tutorial provided by FEMA.

viii. **Protected Lands:** Describe any cultural resources, including *historic properties*, i.e., properties listed in or eligible for listing in the National Register of Historic Places, which are located in or within a one-mile radius of the project area and how they may be impacted by the project. Information related to historic properties can be obtained from the State Historic Preservation Office (SHPO) in your respective State - see the website of the National Conference of SHPO: http://www.ncshpo.org/find/index.htm or from the Tribal Historic Preservation Officer (THPO) when tribal lands are involved. Applicants must gather information about the nature and location of these properties from the SHPO. SHPOs should be asked the following questions:

1. Is the proposed project located on, within or adjacent to any properties listed in or eligible for listing in the National Register of Historic Places? Is the proposed project located on, within or adjacent to a National Historic Landmark? If the answer is yes, describe and indicate the geographic relationship between the project and property with maps.
2. Will the proposed project impact, use or alter a building or structure that was constructed more than 50 years ago? If so, describe the building/structure with a statement of its condition, including photographs, and document its age.
3. Is any portion of the project located on tribal lands, meaning lands within the exterior boundaries of any Indian reservation and all dependent Indian communities?
4. Applicants must provide SHOP/THPO responses/information to these questions including any correspondence with the SHPO/THPO, as applicable.

ix. **Coastal Areas:** Determine whether or not the project is within the boundaries of a coastal zone management area (CZMA). For boundary related and contact information related to CZMA, see National Oceanic and Atmospheric Administration, Office of Ocean and Coastal Resource Management's website: http://coastalmanagement.noaa.gov/consistency/welcome.html

Broadband Infrastructure Application
Submission to RUS (BIP) and NTIA (BTOP)

x. **Brownfields:** Determine whether the project is located within a brownfield site. Per 42 U.S.C. 9601, the term "brownfield site" means real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Maps and locations of sites, facilities and properties that have been contaminated by hazardous materials and are being, or have been, cleaned up under EPA's Superfund, RCRA and/or brownfields cleanup programs can be found at the following website: http://iaspub.epa.gov/Cleanups/.

Note: The applicant may submit a copy of any environmental review document that has been prepared in connection with obtaining permits, approvals, or other financing for the proposed project from State, local or other federal bodies. Such material, to the extent relevant, may be used to meet the requirements herein.

Printed Legal Name of Applicant: Page County Broadband Authority

Signature: Bernard P Matt Date: December 14, 2009

The applicant's representative certifies to the best of his/her knowledge and belief that the information contained herein is accurate. Any false information may result in disqualification for consideration of financial assistance or the rescission of financial assistance.

COMMONWEALTH OF VIRGINIA
Office of the Governor

Timothy M. Kaine
Governor

August 10, 2009

Jonathan Adelstein
Administrator of the United States Department of Agriculture
Rural Development's Rural Utilities Service
Broadband Initiatives Program
U.S. Department of Agriculture
1400 Independence Avenue, SW, Stop 1599
Washington, D.C. 20250

Dear Administrator Adelstein:

One of the most important challenges I face, as Governor of Virginia, is ensuring that all businesses and citizens of the Commonwealth have access to affordable and reliable broadband infrastructure. I am very encouraged to see that the American Recovery and Reinvestment Act has committed to providing funding for the expansion and development of broadband infrastructure to rural areas.

The broadband initiatives proposed by the Rural Utilities Service though stimulus dollars are a prime example of how investments in technology can serve as a catalyst to spur huge economic gains in rural communities. With financial help from the American Recovery and Reinvestment Act, the Rural Utilities Service can work towards achieving their goal to "provide and improve broadband service to the highest proportion of rural residents who do not have adequate access to broadband services." In these difficult economic times, achieving these goals will greatly improve the quality of life for all Virginians, but especially those in unserved rural areas.

I urge you to give strong consideration to the many applications from Virginians being submitted to the Broadband Initiatives Program.

Sincerely,

Timothy M. Kaine

COMMONWEALTH OF VIRGINIA
Office of the Governor

Timothy M. Kaine
Governor

August 10, 2009

Lawrence E. Strickling
Assistant Secretary for Communications and Information
Broadband Technology Opportunities Program
National Telecommunications and Information Administration
U.S. Department of Commerce
HCHB, Room 4812
1401 Constitution Avenue, NW
Washington, D.C. 20230

Dear Secretary Strickling:

One of the most important challenges I face, as Governor of Virginia, is ensuring that all businesses and citizens of the Commonwealth have access to affordable and reliable broadband infrastructure. I am very encouraged to see that the American Recovery and Reinvestment Act has committed to providing funding for the expansion and development of broadband infrastructure to rural areas.

The broadband initiatives proposed by the National Telecommunications Information Agency though stimulus dollars are a prime example of how investment in technology can make huge gains in rural communities. With financial help from the American Recovery and Reinvestment Act, the National Telecommunications Information Agency can work towards achieving their goals of creating jobs, closing the gap in broadband access, generating increased investment and demand for broadband, and spreading high-speed access to community centers, schools, universities, libraries, job training centers, hospitals and public safety personnel. In these difficult economic times, achieving these goals will greatly improve the quality of life for all Virginians, but especially those in underserved rural areas.

I urge you to give strong consideration to the many applications from Virginians being submitted to the Broadband Technology Opportunities Program.

Sincerely,

Timothy M. Kaine

MARK R. WARNER
VIRGINIA

United States Senate

WASHINGTON, DC 20510-4606

COMMITTEES:
BANKING, HOUSING, AND URBAN AFFAIRS
COMMERCE, SCIENCE, AND TRANSPORTATION
BUDGET
RULES AND ADMINISTRATION

August 7, 2009

Lawrence E. Strickling, Assistant Secretary for Communications and Information
Broadband Technology Opportunities Program
National Telecommunications and Information Administration
U.S. Department of Commerce
HCHB, Room 4812
1401 Constitution Avenue, NW
Washington, DC 20230

Dear Secretary Strickling:

As the former Governor of the Commonwealth of Virginia and now as one of its U.S. Senators, I am very committed to bringing affordable broadband to businesses and citizens throughout the Commonwealth. That is why I am so encouraged by the American Recovery and Reinvestment Act's commitment to provide funding for broadband infrastructure deployment, for enhancing broadband capacity at public computer centers, and for encouraging sustainable adoption of broadband service.

I know how communities benefit when they have access to affordable broadband. When I was Governor, I worked to get grants so that homes and businesses in the small southwest Virginia town of Lebanon could get access to broadband. Lebanon created a job training center so residents could develop new job skills. Lebanon's broadband technology, plus its job training program, made it a community much more attractive to outside investment. As a result, Northrop Grumman and the information technology firm CGI opened facilitie there, providing high-paying, mid-level IT jobs for about 700 people.

The stimulus broadband initiatives from the National Telecommunications Information Agency will provide similar benefits to other Virginia communities. That's why I am so glad so many Virginians are applying to Broadband Technology Opportunities Program, and urge you to give their proposals strong consideration.

Thank you very much.

Sincerely,

Mark R Warner

Mark R. Warner
United States Senator

MARK R. WARNER
VIRGINIA

United States Senate

WASHINGTON, DC 20510-4606

COMMITTEES:
BANKING, HOUSING, AND URBAN AFFAIRS
COMMERCE, SCIENCE, AND TRANSPORTATION
BUDGET
RULES AND ADMINISTRATION

August 7, 2009

Jonathan Adelstein, Administrator of United States Department of Agriculture,
Rural Development's Rural Utilities Service
Broadband Initiatives Program
Rural Utilities Service
U.S. Department of Agriculture
1400 Independence Avenue, SW, Stop 1599
Washington, DC 20250

Dear Administrator Adelstein:

As the former Governor of the Commonwealth of Virginia and now as one of its U.S. Senators, I am very committed to bringing affordable broadband to businesses and citizens throughout the Commonwealth. That is why I am so encouraged by the American Recovery and Reinvestment Act's commitment to provide funding for broadband infrastructure deployment to rural communities.

I know how communities benefit when they have access to affordable broadband. When I was Governor, I worked to get grants so that homes and businesses in the small southwest Virginia town of Lebanon could get access to broadband. Lebanon created a job training center so residents could develop new job skills. Lebanon's broadband technology, plus its job training program, made it a community much more attractive to outside investment. As a result, Northrop Grumman and the information technology firm CGI opened facilities there, providing high-paying, mid-level IT jobs for about 700 people.

The stimulus broadband initiatives from the Rural Utilities Service will provide similar benefits to other Virginia communities. That's why I am so glad so many Virginians are applying to the Broadband Initiatives Program, and urge you to give their proposals strong consideration.

Thank you very much.

Sincerely,

Mark R Warner

Mark R. Warner
United States Senator

JIM WEBB
VIRGINIA

COMMITTEE ON
ARMED SERVICES
COMMITTEE ON
FOREIGN RELATIONS
COMMITTEE ON
VETERANS' AFFAIRS
JOINT ECONOMIC COMMITTEE

United States Senate

WASHINGTON, DC 20510-4605

WASHINGTON OFFICE:
WASHINGTON, DC 20510
(202) 224-4024

August 18, 2009

Mr. Jim Wasilewski
Director for Congressional Affairs
National Telecommunications and Information Administration
U.S. Department of Commerce
Herbert Hoover Building, Room 4898
Fourteenth Street and Constitution Avenue, NW
Washington, DC 20230

Dear Mr. Wasilewski:

I am writing in support of an application recently submitted by the Page County Broadband Authority to the National Telecommunications and Information Administration's (NTIA) Broadband Technology Opportunities Program (BTOP) for the expansion of affordable, high-speed telecommunications access.

It is my understanding that Page County is currently facing approximately 11 percent unemployment. Funding through the BTOP would provide the Page County Broadband Authority with the resources to pursue a project critical to the region's economic restructuring effort. In addition, this project will enhance the delivery of medical and educational services to Virginians living in Page County.

It appears that the Page County Broadband Authority is well-positioned to meet the goals of the Broadband Technology Opportunities Program and the goals of the U.S. Department of Commerce. I ask that you give their application every fair and favorable consideration in keeping with the merits of the application and the guidelines of your program. I further ask that you keep me informed of the status of this proposal by contacting Martin Mash in my Roanoke office at 3140 Chaparral Drive, Building C, Suite 101, Roanoke, Virginia 24018. Martin can also be reached via telephone at (540) 772-4236.

With warm regards, I remain

Sincerely,

Jim Webb

Jim Webb
United States Senator

JW: mm

ERIC CANTOR
7TH DISTRICT, VIRGINIA

REPUBLICAN WHIP

COMMITTEE:
WAYS AND MEANS

Congress of the United States
House of Representatives
Washington, DC 20515–4607

WASHINGTON OFFICE:
329 CANNON HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225–2815
FAX: (202) 225–0011

RICHMOND OFFICE:
4201 DOMINION BOULEVARD, SUITE 110
GLEN ALLEN, VA 23060
(804) 747–4073
1–800–438–3793
FAX: (804) 747–5308

CULPEPER OFFICE:
763 MADISON ROAD, SUITE 207
CULPEPER, VA 22701
(540) 825–8960
FAX: (540) 825–8964

http://cantor.house.gov

August 12, 2009

Mr. David Villano
U.S. Department of Agriculture
1400 Independence Ave, SW
Washington, D.C. 20250

Dear Mr. Villano:

I am writing on behalf of the Page County Broadband Authority and their grant application (OMB 0572-0142) for the U.S. Department of Agriculture Broadband Initiative Program.

Funding from this grant will support the expansion of affordable, high-speed telecommunications access. The Page County Broadband Authority's project is a critical component to the region's economic restructuring effort and is a priority need for the area. The open access network model that will be developed is optimal for rural, underserved communities, and will lead to greater competition for services and better quality of service for the community. The economic development opportunities that will be created through this project are significant and will greatly improve the current model in use by Page County.

I hope you will give the Page County Broadband Authority every consideration in this process. Thank you for your time and attention in this matter.

With kind regards, I am

Sincerely,

Eric Cantor

Eric Cantor
Member of Congress

PRINTED ON RECYCLED PAPER

ERIC CANTOR
7TH DISTRICT, VIRGINIA

REPUBLICAN WHIP

COMMITTEE:
WAYS AND MEANS

Congress of the United States
House of Representatives
Washington, DC 20515–4607

WASHINGTON OFFICE:
329 CANNON HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225–2815
FAX: (202) 225–0011

RICHMOND OFFICE:
4201 DOMINION BOULEVARD, SUITE 110
GLEN ALLEN, VA 23060
(804) 747–4073
1–800–438–3793
FAX: (804) 747–5308

CULPEPER OFFICE:
763 MADISON ROAD, SUITE 207
CULPEPER, VA 22701
(540) 825–8960
FAX: (540) 825–8964

http://cantor.house.gov

August 12, 2009

U.S. Department of Commerce
1401 Constitution Ave, NW
Washington, D.C. 20230

Dear Grant Coordinator:

I am writing on behalf of the Page County Broadband Authority and their grant application (OMB 0660-0031) for the U.S. Department of Commerce Broadband Technology Opportunities Program.

Funding from this grant will support the expansion of affordable, high-speed telecommunications access. The Page County Broadband Authority's project is a critical component to the region's economic restructuring effort and is a priority need for the area. The open access network model that will be developed is optimal for rural, underserved communities, and will lead to greater competition for services and better quality of service for the community. The economic development opportunities that will be created through this project are significant and will greatly improve the current model in use by Page County.

I hope you will give the Page County Broadband Authority every consideration in this process. Thank you for your time and attention in this matter.

With kind regards, I am

Sincerely,

Eric Cantor

Eric Cantor
Member of Congress

PRINTED ON RECYCLED PAPER

Timothy M. Kaine
Governor

Patrick O. Gottschalk
Secretary of
Commerce and Trade

COMMONWEALTH of VIRGINIA

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

William C. Shelton
Director

August 11, 2009

Mr. Mark Belton
County Administrator
Page County
171 South Court Street
Luray, Virginia 22835

Dear Mr. Belton:

I am writing this letter in support of the Page County Broadband Authority application for funding to support the expansion of affordable, high-speed telecommunications access. The Virginia Department of Housing and Community Development worked closely with Page County to complete a comprehensive and strategic community telecommunications planning effort, and we are pleased to support your efforts to implement this plan.

The Page County Broadband Authority's project is a critical component to the region's economic restructuring effort and we see the provision of broadband telecommunications services as a priority need for the area. We strongly feel that the open access network model to be developed is optimal for rural, underserved communities, and will lead to greater competition for services and better quality of service for your community. The economic development opportunities that will be created through this project are significant and I hope your request for assistance receives favorable consideration.

Thank you. Should you have any questions, I can be reached at 804-371-7000.

Sincerely,

Bill Shelton
Director

cc: Tom Cardman, Page County Broadband Authority

NSVRC
NORTHERN SHENANDOAH VALLEY
REGIONAL COMMISSION

103 East 6th Street
Front Royal, Virginia 22630
Phone: 540.636.8800
Fax: 540.635.4147
E-mail: nsvrc@shentel.net

OFFICERS
Dennis M. Morris
Chairman
John R. Riley
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John E. Vance
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Mayor Ray E. Ewing
WINCHESTER
Evan H. Clark
Les Veach
Timothy A. Youmans

August 5, 2009

Mr. Bernie Miller, Chairman
Page County Broadband Authority
117 South Court St.
Luray, VA 22835

Re: Page County Broadband Project

Dear Mr. Miller,

Please accept this letter as our official support for funding through the American Recovery and Reinvestment Act. Funding for this project will enable the development of a broadband network connecting the Towns of Luray, Shenandoah and Stanley for voice, data, and video services. Broadband infrastructure will be accessible to existing and new industry, encouraging economic growth and development. Additionally, the network will provide connectivity to all schools, public safety, municipal and health care facilities. The considerable planning and design work already completed will ensure that this project can be developed expeditiously making it an ide candidate for stimulus funding.

This project, which has been identified by the Northern Shenandoah Valley Regional Commission as the region's highest priority community and economic development initiative, will connect twenty six municipal facilities, nine community services and libraries, ten healtho facilities, twenty four major employers, four state and federal facilities and twelve public scho and higher education sites and will provide service to over 34% of the County's population. I County has also expressed interest in building upon their network to provide broadband servi to a neighboring rural County. Development of this project can serve as the backbone of a la regional system ensuring broadband access to our region's rural populations and businesses.

Socioeconomic conditions within Page County warrant immediate action. Data from the Ce Bureau and HUD report that over 40% of Page County households are earning low to moder incomes making it the most economically distressed jurisdiction within our region. Each of five census tracts contain at least one block group where more than half of the households a low income. Implementation of this project will mean enhanced access, service, and econo opportunity to the County's most vulnerable population.

Again, thank you for the opportunity to support this important community and economic development infrastructure project. Please contact me at (540) 636-8800 if you have any questions or if you would like any additional information.

Sincerely,

Christopher M. Price, AICP

COUNTY OF WARREN

County Administrator's Office
Warren County Government Center
220 North Commerce Avenue, Suite 100
Front Royal, Virginia 22630
Phone: (540) 636-4600
FAX: (540) 636-6066
Email: admin@warrencountyva.net

Douglas P. Stanley
County Administrator

BOARD OF SUPERVISORS
*****

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Glenn I. White
North River District

Tony F. Carter
Happy Creek District

Linda P. Glavis
South River District

Richard H. Traczyk
Shenandoah District

August 11, 2009

Dear BTOP/BIP Reviewer,

I am writing this letter in support of Page County's Telecommunications Broadband Network Implementation Plan. Page County is submitting an application for ARRA broadband stimulus funding and it is our desire to have this letter considered as part of their proposal.

Page County's main goal listed in their application is to "facilitate economic and community development county-wide by investing in broadband infrastructure." While Warren County has the same goals for the under-served portions of our community, we have found that our need is not nearly as significant as our neighboring county. It will be more practical to partner with Page County rather than to submit a stand alone application. Warren County feels that becoming a part of a larger network is the most feasible solution for both counties' broadband needs and will hopefully strengthen the application by providing a multi-jurisdictional approach to the un-served and under-served areas.

If Page County is selected to receive funding through this program, the underserved portions of southern Warren County will see a significant benefit. Tower sites that are located near the county line will allow for the expansion of service to not only Page County, but southern Warren County as well. With this in mind, we ask that you accept this letter of support on behalf of Page County, an applicant for broadband stimulus funding.

Sincerely,

Douglas P. Stanley
County Administrator

Shenandoah Valley Partnership
PO Box 2241
Harrisonburg, VA 22801

(540)568-3100
(540)568-3170
svp@jmu.edu
www.shenandoah-valley.biz

August 6, 2009

Mr. Bernard Miller, Chairman
Page County Broadband Authority
117 South Court St.
Luray VA 22835

Dear Chairman Miller:

The Shenandoah Valley Partnership is responsible for economic development marketing of six counties and five cities in central western Virginia. We fully endorse the Page County Broadband Authority high speed "middle mile" network project. As CEO of the Partnership, I believe Page County is well positioned to take advantage of future opportunities, but its ability to do so will be continent upon infrastructure preparation such as this broadband initiative. The Partnership sees it as an essential tool in Page's effort to broaden the economic base and stimulate job growth with Page County. In addition, it will provide high speed reliable connectivity for the educational system, health service and Emergency Medical Service responders within the County.

If you require additional assist from the Partnership please do not hesitate to contact me.

Sincerely,

Robin Sullenberger

Robin Sullenberger, CEO
Shenandoah Valley Partnership

SHENTEL
SHENANDOAH TELECOMMUNICATIONS
P.O. Box 459 • Edinburg, Virginia 22824-0459 • (540) 984-4141

August 6, 2009

Mr. Bernie Miller
Chairman Page County Broadband Authority
117 S. Court St.
Luray, VA 22835

Re: Page County Middle Mile Fiber Project

Dear Mr. Miller:

Thank you very much for the opportunity to express the support of Shenandoah Telecommunications Company (Shentel) for your proposed fiber optic cable infrastructure project. As we have previously discussed, Shentel operates several cellular sites in Page County adjacent to your proposed fiber project. With the rapid expansion of bandwidth requirements for cellular communications, your infrastructure could provide a conduit for accessing increasing amounts of bandwidth for maintaining our competitiveness as we continue to meet our customers' needs.

Shentel has identified several tower sites within reach of your proposed middle mile fiber infrastructure and understand that the Page County project has incorporated fiber to reach those sites. Fiber backhaul from those towers will allow Shentel to deploy high speed wireless services to reach a large number of currently unserved areas.

We look forward to continued discussions concerning our needs hopefully culminating in an agreement wherein we can utilize your infrastructure to meet our bandwidth needs within Page County.

Sincerely,

William L. Pirtle
Vice President - Sales

Page Memorial Hospital

August 10, 2009

Mr. Bernie Miller, Chairman
Page County Broadband Authority
117 South Court Street
Luray, VA 22835

Dear Chairman Miller,

Page Memorial Hospital, an affiliate of Valley Health, is a Critical Access Hospital committed to setting a standard of excellence for healthcare in Page County and the surrounding areas. From emergency and surgical services to home care and rehabilitation, Page Memorial Hospital provides a full array of services with advanced technology and professional, compassionate care.

Valley Health is a not-for-profit organization serving the healthcare needs of people in Virginia, West Virginia and Maryland.

We are pleased to express our full support for the proposed broadband project being put forward by the Page County Broadband Authority.

Page Memorial services all three towns and rural areas of Page County. Access to improved connectivity will significantly enhance our ability to tend to patients' care, especially in our satellite offices within the towns of Stanley and Shenandoah. We expect that increased network bandwidth will enable us to take advantage of telemedicine opportunities, thereby providing high quality care and more affordable access to these communities.

This project will enable the hospital to develop more advanced systems to exchange and track of health records, send prescriptions directly to pharmacies, transfer information regarding specialty care, and receive information from other providers with less risk of inaccuracies.

Please do not hesitate to contact us if you have any questions.

Sincerely,

Travis Clark

200 Memorial Drive • Luray, VA 22835 • Phone 540-743-4561 • Fax 540-743-9560

Page County
VIRGINIA U.S.A.

Fire-EMS
117 South Court Stree
Luray, Virginia 2283
Phone: 540-743-414
Fax: 540-743-453
Email: wshifflett@pagecounty.virginia.g
www.PageCounty.Virginia.g

07-31-2009

Mr. Bernie Miller, Chairman
Page County Broadband Authority
9216 U. S. Hwy 340 N
Rileyville, VA 22650

Dear Bernie:

We are pleased to lend our support to create a more effective emergency network in Page County that will provide better service to all our citizens.

In these difficult economic times, providing good quality service is becoming more challenging. Efficient, timely and accurate communication and information exchange is critical in our area of work and without adequate technology Page County's ability to care for its citizens is significantly hampered. This type of broadband initiative will allow us lots more opportunities to expand out technological programs within the Fire, EMS and 911 dispatch center areas. We look forward to the opportunities to improve local services and benefit from national efforts in emergency services by having access to sufficient broadband capability.

We are committed to going ahead with the use of this technology and would like to discuss our needs with you in more detail. This program will work hand in hand with numerous types of internet based programs that we currently are interested in, such as electronic patient care reporting, and electronic hospital notification in cardiac emergencies during a heart attack.

Please contact me once funding has been put in place for the fiber network so that we can move forward.

Warmest Regards,

Wesley R. Shifflett
Coordinator of Fire and Emergency Medical Services
Page County Fire - EMS

LORD FAIRFAX
COMMUNITY COLLEGE
YOUR FUTURE. OUR FOCUS.

Office of the President

August 4, 2009

Page County Broadband Authority
117 South Court Street
Luray, VA 22835

Dear Chairman Miller:

On behalf of Lord Fairfax Community College (LFCC), please accept this letter in support of your plan to create a fiber-based mid-mile solution in Page County.

As you know, LFCC's main and ancillary campuses are 50 to 70 miles away from Luray. If a reliable fiber network was established in Page County, it would enable us to connect with our other campuses, thus significantly improving our ability to develop and expand programming here. This expansion would offer many more opportunities for the local students, both youth and adult, to benefit from the teachers and student populations in other counties.

The proposed fiber project is critical to the future of Page County in terms of stimulating jobs, enhancing the education levels of county residents and providing expanded post-secondary opportunities for our children.

Please contact us once funding for the fiber network has been secured. We would like to discuss our broadband needs with you and negotiate access to the network.

Sincerely,

Cheryl Thompson-Stacy
President

MIDDLETOWN CAMPUS
173 Skirmisher Lane
Middletown, VA 22645
(540) 868-7101
(540) 868-7103 Fax

FAUQUIER CAMPUS
6480 College Street
Warrenton, VA 20187
(540) 351-1513
(540) 351-1533 Fax

LURAY-PAGE COUNTY CENTER
334 North Hawksbill Street
Luray, VA 22835
(540) 843-0722
(540) 843-0322 Fax

800-906-5322 ▪ TTY (711) Virginia Relay ▪ http://www.lfcc.edu

PAGE COUNTY PUBLIC SCHOOLS
Making a Difference - One Student at a Time
Randall W. Thomas, Division Superintendent

735 West Main Street • Luray, Virginia 22835
phone: (540) 743-6533 • fax (540) 743-7784
e-mail: pageco@shentel.net

Randy J. Bailey, Chairman, District 1
Melissa S. Deibert, Vice Chairman, District 2
Sharon K. Lucas, District 3
C.L. "Chuck" Tomney, District 5
Larry Foltz, District 4

August 6, 2009

Mr. Bernie Miller, Chairman
Page County Broadband Authority
117 South Court Street
Luray, VA 22835

Dear Chairman Miller:

On behalf of the Board of Education of Page County, Virginia, please accept this letter in support of your initiative to create a fiber-based mid-mile solution that would enable the connection of virtually all of the education facilities in the county.

The ability to interconnect at speeds and capacities far beyond what is available today will be critical to our sustained efforts for the disadvantaged, provide innovative distance learning programs for children and adults in the county, reduce the burden of educational costs and better serve the needs of the disabled community for rehabilitation services and research.

We currently do not have a comprehensive fiber broadband solution for all of our schools. The proposed initiative would provide the means to better and more economically meet the educational needs of all of Page County.

It is our intention to enter into negotiations with you regarding our capacity needs in order to acquire access to this fiber network.

Sincerely,

Randall W. Thomas

Dr. Randall W. Thomas
Division Superintendent

An Equal Opportunity Employer
The Page County School Board does not discriminate on the basis of race, color, national origin, age, religion, marital status, disability or sex in its education programs or employment.

MASSANUTTEN
REGIONAL
LIBRARY

inform | inspire | connect

August 5, 2009

Page County Broadband Authority
117 South Court Street
Luray, VA 22835

Dear Chairman Miller,

As you are aware, MRL is actively engaged in discussions with the Library of Virginia and the Gates Foundation (Opportunity ONLINE Program) at this time to find an effective means of bringing high speed connectivity to all of the libraries in its service area. To this end, I am writing to lend our support to the Page County broadband initiative to establish a mid-mile solution county-wide.

The project will provide the means to communicate via high speed link between all the libraries in the region. This connectivity is vital to MRL's ability to serve low income populations, seniors, the disabled, and the underserved with the advantages of broadband. The importance of building a strong regional library system has become more critical as the resources of each individual library diminish. Library service to a region that includes large rural areas needs high speed connectivity as the best resource to improve quality of life in education, literacy, access to job opportunities and skill development.

I am pleased to see this project moving forward and would like to discuss our capacity needs with you. Please contact me once funding is in place so we can begin negotiations regarding access by the library system to the network.

Kindest regards,

Phillip T. Hearne
Library Director

Accredited Law Enforcement Agency

PAGE COUNTY SHERIFF'S OFFICE

108 South Court Street • Luray, Virginia 22835 • (540) 743-6571 • FAX (540) 743-1252 • EMAIL pcso@pagesheriff.com
Website: www.pagesheriff.com

Mr. Bernie Miller, Chairman
Page County Broadband Authority
117 South Court Street
Luray, VA 22835

Dear Bernie,

We are pleased to lend our support to create a more effective first responder and emergency network in Page County.

In a post 9/11 environment such communication has become a priority and one that requires a coordinated and carefully planned solution. We believe that Page County's broadband project will provide an efficient, effective and secure means of interconnection with multiple law enforcement, fire and emergency services offices and crews.

We want to negotiate access to this fiber network once the broadband project is funded. Please contact us as soon as you are ready to proceed.

Sincerely,

John B. Thomas,
Sheriff, Page County

PREMIER
TECHNICAL SERVICES

Page County Broadband Authority
Bernie Miller, Chairman
117 South Court Street
Luray, VA 22835

Dear Chairman Miller,

Page County is currently certified by the Small Business Administration (SBA) as a Historically Underutilized Business Zone (HUBZone).

Our local business community has a critical need in your initiative to create a fiber-based mid-mile solution that would enable the connection of virtually all of the large and small businesses, as well as the educational community in Page County, Virginia.

This connectivity will provide the opportunity for the public/private/educational communities to communicate more effectively and in a timely fashion. Currently, there surely are efforts we cannot receive; let alone respond to that would help the financial picture of our county.

We currently do not have a comprehensive broadband solution for our community. The proposed initiative would provide the means to better and more economically meet the business and educational needs of all of Page County.

Premier Technical Services Corporation, established in 1989, is in the process of expanding into a new offering to our clients by building a Data Center and COOP Facility in Page County. This initiative, along with our new facilities would be the (positive) *Perfect Storm* upgrade to a competitive level needed in the county. Premier stands ready to support, in any way we can, your broadband initiatives.

If you have any comments or questions, please feel free to contact me immediately.

Sincerely,

S. David Tong, CGC
President and CEO
Dave.Tong@pts-usa.com

MOUNTAIN VALLEY BROADBAND
57 South Main Street, Suite 602
Harrisonburg, VA 22801

August 5, 2009

Mr. Bernie Miller, Chairman
Page County Broadband Authority
117 South Court Street
Luray, VA 22835

Dear Chairman Miller:

As a major investor in the Mountain Valley Broadband "middle-mile" project, I wish to convey our support for Page County's Broadband Authority middle-mile high speed fiber network.
As you are aware Mountain Valley Broadband is proposing a project that will be compatible with yours. In fact, as each of us progresses it is advantageous to look for synergies that complement each other's projects. Like your project, our goal is to bring high-speed broadband at low wholesale cost through our service areas. This will then allow individual ISPs to bring high-speed service at a low cost to last-mile customers.

We look forward to collaborating with Page County, the Shenandoah Valley Partnership and James Madison University in order to bring a significant economic development, health services and educational tool to the Shenandoah Valley.

Sincerely,

John N. Serrell

John N. Serrell
Business Development Director
jmserrell@yahoo.com

JNS/k

APPLICANT'S NAME: Page County Broadband Authority #1410

BUDGET INFORMATION - Construction Programs

NOTE: Certain Federal assistance programs require additional computations to arrive at the Federal share of project costs eligible for participation. If such is the case, you will be notified.

COST CLASSIFICATION	a. Total Cost	b. Matching Funds (Cash)	c. Matching Funds (In-Kind)	d. Federal Funding Request (Columns a-b-c)
1. Administrative and legal expenses	$82,765	$16,553	$0	**$66,212**
2. Land, structures, rights-of-way, appraisals, etc.	$25,567	$5,113	$0	**$20,454**
3. Relocation expenses and payments	$0	$0	$0	**$0**
4. Architectural and engineering fees	$171,560	$34,312	$0	**$137,248**
5. Other architectural and engineering fees	$0	$0	$0	**$0**
6. Project inspection fees	$57,750	$11,550	$0	**$46,200**
7. Site work	$0	$0	$0	**$0**
8. Demolition and removal	$0	$0	$0	**$0**
9. Construction	$1,018,203	$203,641	$0	**$814,562**
10. Equipment	$705,331	$141,066	$0	**$564,265**
11. Miscellaneous	$0	$0	$0	**$0**
12. SUBTOTAL (add #1 through #11)	$2,061,176	$412,235	$0	**$1,648,941**
13. Contingencies	$0	$0	$0	**$0**
14. SUBTOTAL (add #12 and #13)	$2,061,176	$412,235	$0	**$1,648,941**
15. Project (program) income	$0	$0	$0	**$0**
16. TOTAL PROJECT COSTS (*subtract #15 from #14*)	**$2,061,176**	**$412,235**	**$0**	**$1,648,941**
FEDERAL FUNDING				
17. Federal assistance requested, calculated as follows: (Consult Federal agency for Federal percentage share.) Enter the resulting Federal share.	Enter eligible costs from line 16a Multiply X 20%			$412,235

DETAIL OF PROJECT COSTS

PLEASE COMPLETE THE TABLE BELOW FOR THE DIFFERENT CATEGORIES OF EQUIPMENT THAT WILL BE REQUIRED FOR COMPLETING THE PROJECT. EACH CATEGORY SHOULD BE BROKEN DOWN TO THE APPROPRIATE LEVEL FOR IDENTIFYING UNIT COST

SERVICE AREA or COMMON NETWORK FACILITES:		Eligibility (Yes/No)	Unit Cost	No. of Units	Total Cost	Support of Reasonableness
NETWORK & ACCESS EQUIPMENT					**$82,500**	
Switching					0	
					0	Costs used are representative of multiple vendor equipment used in similar projects.
					0	
Routing	Internet Routers	Yes	14,750.00	1.00	14,750	
					0	
					0	
Transport	Point to point data backhaul	Yes	4,000.00	2.00	8,000	
					0	
					0	
Access	Optical Line Terminals with supporting power supplies and hardware	Yes	43,000.00	1.00	43,000	
					0	
	Mini optical line terminal	Yes	16,750.00	1.00	16,750	
Other					0	
					0	
					0	
OUTSIDE PLANT					**$1,493,731**	
Cables	All Outside Plant Materials	Yes	2.176	206,783.70	449,961	Quantities required are based on engineering assessment and conceptual network design, augmented by on-site make ready engineering analysis. Loose tube & armored cable with hardware, vaults & make-ready. Includes 25 vaults, 233 splice closures, 1620 splices & all other outside plant hardware.
	OSP Construction Labor	Yes	4.924	206,783.70	1,018,203	
					0	
Conduits					0	
					0	
					0	
Ducts					0	
					0	
					0	
Poles					0	
					0	
					0	
Towers	60' self supporting tower		25,567.00	1.00	25,567	Cost is representative of tower cost incurred in similar projects. Turn key install.
					0	
					0	
Repeaters					0	
					0	
					0	
Other					0	
					0	

SERVICE AREA or COMMON NETWORK FACILITES:		Eligibility (Yes/No)	Unit Cost	No. of Units	Total Cost	Support of Reasonableness
BUILDINGS					**$0**	
New Construction					0	
					0	
					0	
Pre-Fab Huts					0	
					0	
					0	
Improvements & Renovation					0	
					0	
					0	
Other					0	
					0	
					0	
CUSTOMER PREMISE EQUIPMENT					**$112,320**	
Modems					0	
					0	
					0	
Set Top Boxes					0	
					0	
					0	
Inside Writing					0	
					0	
					0	
Other	Optical network terminals, installation and drop connection	Yes	1,440.00	78.00	112,320	Costs used are representative of multiple vendor equipment used in similar projects.
					0	
					0	
BILLING SUPPORT AND OPERATIONS SUPPORT SYSTEMS					**$25,000**	
Billing Support Systems					0	
					0	
					0	
Customer Care Systems					0	
					0	
					0	
Other Support	Network OSS for network management and provisioning	Yes	25,000.00	1.00	25,000	Costs used are representative of multiple vendor equipment used in similar projects.
					0	
					0	

SERVICE AREA or COMMON NETWORK FACILITES:		Eligibility (Yes/No)	Unit Cost	No. of Units	Total Cost	Support of Reasonableness
OPERATING EQUIPMENT					**$0**	
Vehicles					0	
					0	
					0	
Office Equipment / Furniture					0	
					0	
					0	
Other					0	
					0	
					0	
PROFESSIONAL SERVICES					**$325,125**	
Engineering Design	Fiber design	Yes	$2,300.00	39.00	89,700	Engineering & design units are based on engineering assessment and conceptual network design, augmented by on-site make ready engineering analysis. Standard industry practice is to bill by the mile, hence the units indicated are miles (fiber design, strand mapping, GPS) billed at rates competitive with similar projects. Mileage differs between road mileage and premise mileage. Billing rates and budgeted hours (units) for project management, consulting and legal assistance are typical for similar projects of this magnitude.
	Strand mapping, road GPS	Yes	$1,200.00	34.00	40,800	
	Make ready engineering	Yes	$840.00	34.00	28,560	
Project Management	Project oversight, compliance	Yes	$125.00	485.00	60,625	
	RFP development, analysis	Yes	$145.00	80.00	11,600	
	Labor Compliance	Yes	$75.00	87.20	6,540	
Consulting	Network integration & turn up	Yes	$145.00	90.00	13,050	
	Design consulting	Yes	$145.00	50.00	7,250	
	Permits, environmental studies	Yes	$150.00	35.00	5,250	
Other	Quality control (inspection)	Yes	$52.50	1,100.00	57,750	
	Legal assistance	Yes	$200.00	20.00	4,000	
TESTING					**$22,500**	
Network Elements					0	
					0	
					0	
IT System Elements					0	
					0	
					0	
User Devices					0	
					0	
					0	
Test Generators					0	
					0	
					0	
Lab Furnishings					0	
					0	
					0	
Servers / Computers	Data storage & servers	Yes	$11,250.00	$2.00	22,500	Costs used are representative of multiple vendor equipment used in similar projects.
					0	
					0	

SERVICE AREA or COMMON NETWORK FACILITES:		Eligibility (Yes/No)	Unit Cost	No. of Units	Total Cost	Support of Reasonableness
OTHER UPFRONT COSTS					$0	
Site Preparation					0	
					0	
					0	
Other					0	
					0	
					0	
				PROJECT TOTAL:	$2,061,176	

General Budget Overview

Budget	Loan Request	Federal Funding Request	Matching Funds (Cash)	Matching Funds (In-Kind)	Equity	Debt	Bond	Other	TOTAL
Network & Access Equipment (switching, routing, transport, access)		66,000	16,500						$82,500
Outside Plant (cables, conduits, ducts, poles, towers, repeaters, etc.)		1,194,985	298,746						$1,493,731
Buildings and Land – (new construction, improvements, renovations, lease)									$0
Customer Premise Equipment (modems, set-top boxes, inside wiring, etc.)		89,856	22,464						$112,320
Billing and Operational Support Systems (IT systems, software, etc.)		20,000	5,000						$25,000
Operating Equipment (vehicles, office equipment, other)									$0
Engineering/Professional Services (engineering design, project management, consulting, etc.)		260,100	65,025						$325,125
Testing (network elements, IT system elements, user devices, test generators, lab furnishings, servers/computers, etc.)		18,000	4,500						$22,500
Site Preparation									$0
Other									$0
TOTAL BROADBAND SYSTEM:	$0	$1,648,941	$412,235	$0	$0	$0	$0	$0	$2,061,176

Balance Sheet

	Forecast Project Period				
Assets	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Current Assets					
Cash	$ 106,262	$ 28,099	$ 29,699	$ 44,405	$ 61,716
Marketable Securities	$ -	$ -	$ -	$ -	$ -
Accounts Receivable	$0	$ -	$ -	$ -	$ -
Notes Receivable	$ -	$ -	$ -	$ -	$ -
Inventory	$ -	$ -	$ -	$ -	$ -
Prepayments	$ -	$ -	$ -	$ -	$ -
Other Current Assets	$ -	$ -	$ -	$ -	$ -
Total Current Assets	$ 106,262	$ 28,099	$ 29,699	$ 44,405	$ 61,716
Non-Current Assets					
Long-Term Investments	$ -	$ -	$ -	$ -	$ -
Amortizable Asset (Net of Amortization)	$ -	$ -	$ -	$ -	$ -
Plant in Service	$ 515,294	$ 2,061,176	$ 2,072,164	$ 2,072,164	$ 2,072,164
Less: Accumulated Depreciation	$ (15,880)	$ (95,278)	$ (222,864)	$ (351,000)	$ (479,135)
Net Plant	$ -	$ -	$ -	$ -	$ -
Other	$ -	$ -	$ -	$ -	$ -
Total Non-Current Assets	$ 499,414	$ 1,965,898	$ 1,849,300	$ 1,721,164	$ 1,593,029
Total Assets	$ 605,676	$ 1,993,997	$ 1,878,999	$ 1,765,569	$ 1,654,745
Liabilities and Owners' Equity	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Liabilities					
Current Liabilities					
Accounts Payable	$ -	$ -	$ -	$ -	$ -
Notes Payable	$ -	$ -	$ -	$ -	$ -
Current Portion - Total Debt	$ -	$ -	$ -	$ -	$ -
Current Portion - Other Debt	$ -	$ -	$ -	$ -	$ -
Other Current Liabilities	$ -	$ -	$ -	$ -	$ -
Total Current Liabilities	$ -	$ -	$ -	$ -	$ -
Long-Term Liabilities					
Deferred Revenue	$0	$ -	$ -	$ -	$ -
Existing Debt	$ -	$ -	$ -	$ -	$ -
Proposed Debt	$ -	$ -	$ -	$ -	$ -
Existing Debt	$150,000	$125,000	$100,000	$75,000	$50,000
Total Long-Term Liabilities	$ 150,000	$ 125,000	$ 100,000	$ 75,000	$ 50,000
Total Liabilities	$ 150,000	$ 125,000	$ 100,000	$ 75,000	$ 50,000
Owner's Equity					
Capital Stock	$ -	$ -	$ -	$ -	$ -
Additional Paid-In Capital	$103,059	$309,176	$ -	$ -	$ -
Patronage Capital Credits	$ -	$ -	$ -	$ -	$ -
Retained Earnings	$ 352,617	$ 1,559,821	$ 1,778,999	$ 1,690,569	$ 1,604,745
Total Equity	$ 455,676	$ 1,868,997	$ 1,778,999	$ 1,690,569	$ 1,604,745
Total Liabilities and Owner's Equity	$ 605,676	$ 1,993,997	$ 1,878,999	$ 1,765,569	$ 1,654,745

Income Statement

	Forecast Project Period				
	Year 1	Year 2	Year 3	Year 4	Year 5
Revenues					
Network Services Revenues:					
Local Voice Service	$ -	$ -	$ -	$ -	$ -
Broadband Data	$0	$3,445	$36,562	$37,476	$38,413
Video Services	$ -	$ -	$ -	$ -	$ -
Network Access Service Revenues	$0	$6,772	$67,707	$68,842	$70,005
Universal Service Fund	$ -	$ -	$ -	$ -	$ -
Toll Service/Long Distance Voice	$ -	$ -	$ -	$ -	$ -
Installation Revenues	$ -	$ -	$ -	$ -	$ -
Other Operating Revenues	$0	$13,238	$13,238	$13,238	$13,238
Grant Revenue (80% of Project)	$412,235	$1,236,706			
Tax Revenue					
Other Revenues 1 (Page Co 20% Match)	$0	$0	$ -	$ -	$ -
Other Revenues 2 (see attached sheet)	$0	$3,719	$983	$1,039	$1,554
Uncollectible Revenues	$ -	$ -	$ -	$ -	$ -
Total Revenues	$ 412,235	$ 1,263,880	$ 118,490	$ 120,595	$ 123,210
Expenses					
Backhaul	$ -	$ -	$ -	$ -	$ -
Network Maintenance/Monitoring	$10,000	$43,705	$45,016	$45,842	$46,689
Utilities	$443	$454	$465	$477	$489
Leasing	$1,872	$1,919	$1,967	$2,016	$2,066
Sales/Marketing	$ -	$ -	$ -	$ -	$ -
Customer Care	$ -	$ -	$ -	$ -	$ -
Billing	$588	$648	$744	$744	$744
Corporate G&A	$ -	$ -	$ -	$ -	$ -
Other Operating Expense 1 (See Attached)	$28,211	$28,211	$28,211	$28,211	$28,211
Other Operating Expense 2 (Please Define)	$ -	$ -	$ -	$ -	$ -
Total	$ 41,113	$ 74,937	$ 76,402	$ 77,289	$ 78,198
EBITDA	$ 371,122	$ 1,188,943	$ 42,088	$ 43,306	$ 45,011
Depreciation	$ (15,880)	$ (79,398)	$ (127,586)	$ (128,136)	$ (128,136)
Amortization	$ -	$ -	$ -	$ -	$ -
Earnings Before Interest and Taxes	$ 355,242	$ 1,109,545	$ (85,498)	$ (84,830)	$ (83,124)
Interest Expense - New Debt	$ -	$ -	$ -	$ -	$ -
Interest Expense - Existing Debt	$ -	$ -	$ -	$ -	$ -
Interest Expense - Other	$2,625	$5,400	$4,500	$3,600	$2,700
Income Before Taxes	$ 352,617	$ 1,104,145	$ (89,998)	$ (88,430)	$ (85,824)
Property Tax	$ -	$ -	$ -	$ -	$ -
Income Taxes	$ -	$ -	$ -	$ -	$ -
Net Income	**$ 352,617**	**$ 1,104,145**	**$ (89,998)**	**$ (88,430)**	**$ (85,824)**

Statement of Cash Flows

	Forecast Project Period				
	Year 1	Year 2	Year 3	Year 4	Year 5
Beginning Cash	$ -	$ 106,262	$ 28,099	$ 29,699	$ 44,405
CASH FLOWS FROM OPERATING ACTIVITIES:					
Net Income	352,617	1,104,145	(89,998)	(88,430)	(85,824)
Adjustments to Reconcile Net Income to Net Cash Provided by Operating Activities					
Add: Depreciation	15,880	79,398	127,586	128,136	128,136
Add: Amortization	-	-	-	-	-
Changes in Current Assets and Liabilities:					
Marketable Securities	-	-	-	-	-
Accounts Receivable	-	-	-	-	-
Inventory	-	-	-	-	-
Prepayments	-	-	-	-	-
Other Current Assets	-	-	-	-	-
Accounts Payable	-	-	-	-	-
Other Current Liabilities	-	-	-	-	-
Deffered Grant Revenue	$0	$0			
Deffered Matching contribution	$0	$0			
	$ 368,497	$ 1,183,543	$ 37,588	$ 39,706	$ 42,311
CASH FLOWS FROM INVESTING ACTIVITIES:					
Capital Expenditures (Eligible Project Costs)	(515,294)	(1,545,882)			
Capital Expenditures (other)	-	-	(10,988)	-	-
Amortizable Asset (Net of Amortization)	-	-	-	-	-
Long-Term Investments	-	-	-	-	-
Net Cash Used by Investing Activities	$ (515,294)	$ (1,545,882)	$ (10,988)	$ -	$ -
CASH FLOWS FROM FINANCING ACTIVITIES:					
Notes Receivable	-	-	-	-	-
Notes Payable	-	-	-	-	-
Principal Payments	-	($25,000)	($25,000)	($25,000)	($25,000)
Grant Award	$0				
Matching Contribution	$103,059	$309,176			
New Borrowing	$150,000	-	-	-	-
Additional Paid-in Capital	-	-	-	-	-
Additions to Patronage Capital Credits	-	-	-	-	-
Payment of Dividends	-	-	-	-	-
Net Cash Provided by Financing Activities	$ 253,059	$ 284,176	$ (25,000)	$ (25,000)	$ (25,000)
Net Increase (Decrease) in Cash	$ 106,262	$ (78,162)	$ 1,600	$ 14,706	$ 17,311
Ending Cash	$ 106,262	28,099	29,699	44,405	61,717

Revenue Assumptions and Calculation:

Year one assumes no revenue from sales and year two includes only small amounts near year end. Revenues were assumed from four different types of customers. Revenue is anticipated from a fifth type (backhaul for wireless customers); this was not included because although wireless providers have confirmed their intent to utilize the proposed middle mile network for backhaul they have refused to enter into contractual agreements and negotiate rate plans until funding is secured citing competitive and confidentiality concerns.

The four types of customers are comprised of:

- Anchor customers requiring relatively large quantities of reliable bandwidth.
- Municipal customers including fire and police whose facilities are passed by the middle mile network
- Customers wishing to lease dark fiber from the new network; and
- Business customers that would be served off the network by a private provider partner

For years three to five, the revenues were calculated as shown in year three in the table below for both network access customers and broadband customers.

Type of Customer	Number of Customers	Revenue/Month/Customer	Annual Revenue
Anchor (Network Access)	3	1260.74 (Note 1-increases from base year at 2.5 % per year)	$45,387.
Business	62	$30.	$22,320.
Subtotal (Network Access)			**$67,707**
Municipal	29	$105.06 (Note 1)	$36,562.
Subtotal (Broadband)			**$35,562**

Other revenue includes leases for dark fiber and interest on monies borrowed for operating expenses but not used during years 1 and 2. Those revenues are shown for year 3 below:

Source of Revenue	Amount and Rate	Total Revenue
Dark Fiber Rental	19.1 miles at $693./mi/yr	$13,238
Interest Income	$12,981 @3.5 percent	$ 454.

Budget Narrative

Applicant Name: Page County Broadband Authority

EasyGrants Number: 1410

Organization Type (from Question 1D on BTOP application): Local, State or Other Government Entity

Proposed Period of Performance: 2010-2011 (8 Quarters)

Total Project Costs: $2,061,176

Total Federal Grant Request: $1,648,941

Total Matching Funds (Cash): $412,235

Total Matching Funds (In-Kind): $0

Total Matching Funds (Cash + In-Kind): $412,235

Total Matching Funds (Cash + In-Kind) as Percentage of Total Project Costs: 20%

1. Administrative and legal expenses

This section consists of the following items from the "Detail of Project Costs":

Detailed Project Cost						
Service Area	Sub-Category	Item Detail	Unit Rate	Budget Units	Extended Cost	Total
Professional Services	Project Management	Project Oversight & Compliance	$125/hour	485 Hours	60,625	
		RFP Development, analysis	$145/hour	80 hours	11,600	
		Labor compliance	$ 75/hour	87.2 hours	6,540	
		Legal Fees	$200/hour	20 hours	4,000	
Service Area Subtotal						82,765
Cost Classification Total						$82,765

Project oversight and compliance will consist of an engineer reviewing monitoring the course of the project, monitoring for contract compliance and handling day to day changes in the project.

There will be two RFPs developed and issued, one for major construction and one for network electronics. RFP development, analysis will include the development of these RFPs by a senior engineer, evaluation and award. Labor compliance will include a review of pay schedules and reimbursements to comply with Federal regulations. Legal assistance will be used on a contract basis to assist in questions regarding the RFPs and other contractual issues.

The administrative and legal assistance that comprise this budgeted category are provided by third party firms under contract. There are no allocated hours included for County staff. Cash matching funds for the Admin and Legal category has been calculated as twenty percent of the total capital cost for this item.

2. Land, structure, rights-of-way, appraisals, etc.

Detailed Project Costs						
Service Area	**Sub-Category**	**Item Detail**	**Unit Rate**	**Budget Units**	**Extended Cost**	**Total**
Outside Plant	Towers	60 ft Tower (turnkey install)	$25,567	1	25,567	
					Service Area Subtotal	25,567
Cost Classification Total						**$25,567**

Cost for this item consists of a tower to be built on County owned property. This tower consists of a 60 ft self supporting with fencing. Cost is estimated based on similar items specified for similar projects and include fencing and erection (as a turn key bid) but not land.

Cash matching funds is calculated as twenty percent of the total capital cost for this item.

3. Relocation expenses and payment

There are no relocation expenses proposed for this project.

4. Architectural and engineering fees

Detailed Project Cost						
Service Area	**Sub-Category**	**Item Detail**	**Unit Rate**	**Budget Units**	**Extended Cost**	**Total**
Professional Services	Engineering Design	Detail Fiber Design	$2300/mile	39 miles	89,700	
		Strand mapping, road GPS	$1200/mile	34 miles	40,800	
		Make Ready Engineering	$840/mile	34 miles	28,560	
	Consulting	Design Consulting	$145/hour	50 hours	7,250	
		Permits, environmental review	$150/hour	35 hours	5,250	
Service Area Subtotal						171,560
Cost Classification Total						**$ 171,560**

Engineering fees consist of strand mapping, make-ready engineering, fiber design and permitting engineering. Totals were based on the mileage to be designed at unit pricing per mile of $2300 for detailed fiber design, $1200 for strand mapping and GPS of the aerial route and $840 for make ready engineering. These are reasonable for a project of this scope and magnitude. Additional Design Consulting (50 hours at $145/hr) and environmental assessments and permitting (35 hours @ $150/hr) are included in this section.

Cash matching funds is calculated as twenty percent of the total capital cost for this item.

5. Other architectural and engineering fees

There were no other architectural and engineering fees identified for this project.

6. Project inspection fees

Detailed Project Cost						
Service Area	Sub-Category	Item Detail	Unit Rate	Budget Units	Extended Cost	
Professional Services	Other	Quality Control (inspection)	$52.50/hour	1100 hours	57,750	
					Service Area Subtotal	57,750
Cost Classification Total						$57,750

Project inspection fees are based on an estimated total number of construction hours with an on-site inspector present for the entire process. The per hour fee of $52.50 is typical for this type of inspection and the 1100 hours is indicative of the entire project schedule.

Cash matching funds is calculated as twenty percent of the total capital cost for this item.

7. Site work

Major site work is not required in this project. Minimal grading to level slab and the erection of fencing around the tower will be required and costs are included in the total of "Towers" in the DPC table and Budget Category 2 (above). This cost is not allocated separately as it will be bid as a turn key install. The budget provided is in line with current vendor estimates for the tower proposed, and those used in similar projects.

8. Demolition and removal

There is no demolition or removal activities proposed for this project.

9. Construction

Detailed Project Cost						
Service Area	Sub-Category	Item Detail	Unit Rate	Budget Units	Extended Cost	Total
Outside Plant	Cables	OSP construction labor	$4.924	206783.7 feet	1,018,203	
					Service Area Subtotal	1,018,203
Cost Classification Total						$1,018,203

Construction consists of make-ready (the process of readying the poles to accommodate attachments) that is performed under the direction of the utility owning the poles, the hanging of strand, hanging of aerial fiber, plowing and directional bore of underground fiber, pulling of fiber through conduit, installation of vaults and splice closures. Fiber will be spliced to provide optical continuity from end to end of the network. The costing was developed using industry standard per foot charges and the total footages for each type of construction to develop the overall construction cost.

Make-ready labor costs are based on our estimate of the hours per mile for make-ready (28) times the labor cost per mile for a typical make-ready crew (R.S. Means Heavy Construction cost data—3 man crew with equipment at $1523/shift). Labor to install fiber and strand (aerial) is estimated at $1.05/ft based on pricing for similar projects. Similarly, splicing is estimated at $20/splice and directional bore at $15/foot.

Fiber and splice closure pricing were obtained from equipment vendors (OFS, 96 count $0.82/foot loose tube fiber and Tyco, B150 closures $200 each). Miscellaneous hardware (strand (.19/ft), miscellaneous pole (.25/ft) and underground hardware ($2./ft)) were obtained based on our knowledge of similar projects.

All construction will be provided by an outside contractor selected via a competitive bid process.

Cash matching funds is calculated as twenty percent of the total capital cost for this item.

10. Equipment

Detailed Project Cost						
Service Area	**Sub-Category**	**Item Detail**	**Unit Rate**	**Budget Units**	**Extended Cost**	**Total**
Outside Plant	Cables	All OSP materials: fiber, attachment hardware, splice points, etc.	$2.176	206,783.7 feet	449,961	
					Service Area Subtotal	$449,961
Network & Access Equipment	Routing	Internet Routers	$14,750	1	14,750	
	Transport	Pt to Pt data Backhaul	$4,000	2	8,000	
	Access	Optical Line Terminals et all	$43,000	1	43,000	
		Mini Optical Line Terminal	$16,750	1	16,750	
					Service Area Subtotal	$82,500
Customer Premise Equipment	Other	Optical network terminals, install. & drop connection	$1440.00	78	112,320	
					Service Area Subtotal	$112,320

Billing Support & Operations System Support	Other Support	Network OSS mgmt & provisioning	$25,000	1	25,000	
					Service Area Subtotal	$25,000
Testing	Servers and Computers	Data storage & servers	$11,250	2	22,500	
					Service Area Subtotal	$22,500
Professional Services	Consulting	Network integration & turn up	$145/hour	90 hours	13,050	
					Service Area Subtotal	$13,050
Cost Classification Total						**$705,331**

The equipment includes all of the outside plant hardware required for this project including fiber optic cable, strand, splice closures, vaults and miscellaneous items needed to create the network, priced on a per unit basis and summed to the total outside plant for the project (listed as All Outside Plant Materials in the "Outside Plant Cables" section of the DPC table).

Additionally, this item includes optical network terminals ("Customer Premises Equipment"), all of the items enumerated in the "Network and Access Equipment" and the items under "Servers/Computers" . That equipment is needed to either route Internet traffic (Routers) or operate the network (Optical line terminals, Point to Point routers and fiber hubs). All of the equipment is being purchased.

Finally, the equipment includes manufacturer's startup support ("Network Integration and turn-up, 90 hours $ 145/hr in the DPC table)

The actual networking equipment (Optical line terminal, Optical network terminals) are based on current pricing on other Icon projects provided by PON (passive optical network) vendors such as Enablence and Alcatel. While prices vary slightly from vendor to vendor, outdoor ONTs are approximately $500 each. The installation, particularly in commercial or institutional occupancies is more than the ONT costing approximately $1000-$1500 plus miscellaneous hardware. OLTs consist of a rack mounted device capable of handling various numbers of blades with each blade capable of handling up to approximatley 132 customers. The basic OLT costs approximately $11,000 without blades increasing by approximately $11,000 for each blade added. The provisioning of Internet access requires the addition of several servers (DNS, Radius at an approximate cost of $11,250). Pricing for Internet equipment was based on discussions with vendors concerning their product lines and approximate price.

Point to Point backhaul equipment was priced for a similar project.

Cash matching funds is calculated as twenty percent of the total capital cost for this item.

11. Miscellaneous

There are no miscellaneous items proposed for this project.

Addendum

There are no indirect costs associated with this project budget. All costs for administrative and legal services are directly billable to a contracted source providing services on behalf of the County.

The above totals correspond to the income statement for year 3 of the Pro-formas. Years four and five were calculated in the same fashion.

Project revenues from the requested grant are shown for years one and two and consist of the 80% Federal portion and the 20% matching funds from Page County. All of those monies are for capital equipment.

Expense Assumptions and Calculations:

The Pro-forma Statement Financial Guide specifically asked for information on fiber cost per mile for middle mile projects as well as for detail on other expenses. This project is primarily aerial in nature using poles owned by the incumbent power company. There are areas, however, where there are no aerial electric utilities or where the cost for make-ready would be prohibitive. For that reason no single cost can be attributed to fiber. Using overall totals for miles of fiber (38.7 miles) and cost (materials plus installation plus make-ready--$1,337,383), and average cost of $34,558/mile results.

It is Page County's intention to utilize an outside provider to operate the network. Network maintenance and monitoring will consist of that cost, annual licensing fees for electronics and software, and equipment repairs. For year three, these quantities are broken out in the table below.

Item	Notes	Annual Cost
Network Operation		$29,959
Electronics Licensing and Support	7.5% annually of installed electronics	$12,086
Equipment Repairs	5% of installed electronics @$200 each +$2000 annually	$ 3,089
Totals		$45,134

Leasing fees and utilities are for access to space in existing County facilities. Billing expenses would be limited to bandwidth charges to the private provider partners and anchor customers. Billing to business and wireless customers would be handled by the private providers serving them.

Item (Year 3)	Notes	Annual Cost
Leased Space	144 sq ft @$13/sq ft, increases at 2.5% annually	$1,967
Utilities		$ 465
Billing		$ 744
Totals		$3,176

Other operating expenses are pole attachment fees and wholesale Internet access for the municipal customers only (Internet is provided for other customers by private provider partners).

Other Operating Expense	Notes	Annual Cost
Pole Attachment Fees	889 poles @ $26/pole/yr	$23,111
Wholesale Internet	7.25 Mbps Av @$50/Mbps	$ 4,350
Miscellaneous Expense		$ 750
Totals		$28,211

For year three, the totals and categories from the three tables total to $76,520, the operating expenses. They can be calculated similarly for other years.

Balance Sheet Items:

Page County intends to fund annually the 20% match for the 80% Federal grant amount. The total for each year was based on the anticipated expenditure for allowable expenses which would be incurred in that year. Since those monies are received and expended in the same year they flow into the balance sheet as retained earnings.

Depreciation is figured annually based on the total capital cost of materials in service. The majority of equipment was depreciated on either a 10 year or 20 year schedule calculated as five percent years one and eleven and ten percent years two through nine (10 year schedule) and similarly for the 20 year depreciation schedule. Electronics were depreciated on a ten year schedule and fiber optic cable on a 20 year schedule. The depreciation schedule for each category runs from the first year of installation forward. The table below shows the results for year two.

Electronics Purchased Year 1	$119,891	Depreciation Year 2 (10 percent)	$11,989
Electronics Purchased Year 2	$366,697	Depreciation Year 2 (5 percent)	$18,335
Fiber and Related Purchased Year 1	$395,404	Depreciation Year 2 (5 percent)	$19,770
Fiber and Related Purchased Year 2	$1,186,211	Depreciation Year 2 (2.5 percent)	$29,655
Total Depreciation Year 2 equals Income sheet value			$79,749

Page County Broadband Authority
Easy Grants ID 1410
Response to MM SIR Follow up Questions v1 Rqst 20100115

Information Request for Page County (EGID 1410) (follow up to SIR Responses):
Page County response indicated below each question in blue type.

BENEFITS & VIABILITY

1. If available, please provide information about any independent third party research (in addition to the Icon survey) that you considered when deciding on un/underserved areas.

The Icon/Page County market survey results were substantiated by the local last mile providers in regards to current service areas. Specifically: The representative from Embarq (Rich Schollmann, Dir of External Affairs) confirmed DSL availability only within the service reach of the Embarq Central Offices located within the towns of Luray, Stanley and Shenandoah. No remote equipment deployed. John Davis, Comcast Manager of Virginia Enterprise Sales, confirmed Comcast had recently acquired the Page County system from Adelphia and it had not been upgraded to Comcast's standards nor was he aware of any plans to do so in the near future. Cable was only available primarily within each of the town limits (3). Rural Broadband Network Services (RBNS) provides wireless services in limited areas of the county, limited due to the serving towers located on the mountains at the far edges of the County requiring line of sight for service. Alex Phillips, the owner of RBNS provided service maps confirming availability. RBNS is also the operator of the Shenandoah Wireless Broadband Authority in Shenandoah. Mr. Phillips confirmed on multiple occasions his interest in serving the Rileyville area particularly that is currently without DSL or cable service. He had been able to connect 'a handful' of customers on the far southern edge of Rileyville (closer to Luray) that were within clear line of sight, far below 10% of households. Additionally, Shentel (Shenandoah Telecommunications) Director of Sales Willie Purtle confirmed their interest in deploying wireless data services from their current cell towers – service the local cellular provider had not deployed in Page County due to the absence of cost effective backhaul to their towers. All providers confirmed take rates (adoption) of much less than 40% of households passed. Rileyville unserved designation further substantiated through the Virginia Broadband Mapping Project that collected service area information directly from providers: See file: Page 1410 Broadband Availability Map Rileyville 20100114. The Icon market survey captured physical street addresses of respondents that were geocoded; responses were graphically displayed, overlaying methods of access with service areas reported by providers.

The home broadband adoption rates reported in the Icon market study were compared to the national rates for rural areas and low income population reported in the Pew Internet report, Home Broadband 2008 (see report online at http://www.pewinternet.org/Reports/2008/Home-Broadband-2008.aspx.) Pew's research indicates:

- 25% of low-income Americans – those whose household incomes are $20,000 annually or less – reported having broadband at home in April 2008.
- 38% of those living in rural American now have broadband at home

U.S. Department of Housing and Urban Development data indicates 9,296 low to moderate income (LMI) households located throughout the County and comprising over 40% of total households. Each of the five census tracts contain a minimum of one block group of households (total of thirteen block groups) in excess of 51% LMI.

2. **There is some inconsistency between the pricing table submitted with the application and pricing submitted as part of the SIR. Please provide guidance on which table to use.**

   Please use the pricing table submitted as part of the SIR.

3. **Point-to-point pricing for anchor institutions (per SIR response) is $1,200/mo for 45Mbps and for municipal customers is $100/mo for 10Mbps – please explain the difference.**

   Anchor institutions are locations that have been identified that require highly reliable bandwidth at reasonable cost. The $1200/month would provide the local loop from an ISP partner with QOS and other guarantees of uptime. The ISP would actually provide the data portion of the service which would be guaranteed bandwidth, not oversubscribed.

   The one type of customer that would actually receive direct Internet service over the Page County network are the municipal customers. They would be provided with a higher Internet bandwidth than the currently have at a reasonable price. The Internet would be oversubscribed to the degree possible consistent with meeting their demands.

4. **Small business pricing (per SIR response) is $30/mo for up to 50Mbps for the "network access for private providers". Please confirm whether this is an incentive pricing given to local ISPs, or whether it is it extended to any small business.**

   This is primarily the access charge to the ISP partner to deliver service to their customers along the middle mile network.

5. **Please provide more detail regarding the proposed dark fiber lease pricing ($693/fiber pair/year). Please also indicate whether this pricing is available to all customers or particular types of customers; and provide additional details on this planned service offering including the planned length of the fiber connection (if relevant).**

   As part of the RFI process, Page identified one cellular provider who wishes to lease fiber to interconnect several towers with high bandwidth, reliable connectivity. They expressed their desire to lease dark fiber and provide the network capacity themselves. The path between towers, 19.1 miles was costed and used to develop the annual cost ($693/fiber pair/mile/per year) which would pay for approximately 20 percent of the construction cost but utilize only a few percent of the fiber. While no other provider has

Attachment K, L & M have been reworked in light of comments made in connection with another application. We believe that this may obviate the need for additional explanations. Specific questions are also discussed in items i to iii below:

i) **Income Statement:** Please explain why the grant funds are anticipated to be received in year one versus years 1-2 using a reimbursement model. Please provide more detail behind the depreciation schedule used, specifically why the depreciation expense fluctuates between years 2-5.

Most items were depreciated on either a ten or twenty year schedule with the majority of items (fiber optic cable and construction) depreciated over twenty years. For all items the depreciation is straight line with the percentage in years 1 (the actual year the equipment is purchased) and the final year half as much as in other years. As an example, for cable purchased in year 1, the depreciation is 2.5% in years 1 and 21 and 5% in all other years. For cable purchased in year 2, the depreciation is 2.5% in that year and year 22, and five percent in years 3-21. In the previously submitted documents there was an error in the depreciation calculation in years four and five which has been corrected. See file: Page 1410 Income Statement revised 20100114 *sent via email 20100115.*

ii) **Balance Sheet:** Please explain why there is $1,552,907 in accounts receivable and deferred revenue in year one. Please explain why the plant in service is greater than the total project cost in years 2 and beyond. Please provide more detail behind the $150,000 long term debt listed on the Balance Sheet.

A shortfall in revenue is expected in the first years of operation. The $150,000 was included as a placeholder against this shortfall. Page County has agreed to fund shortfalls and a letter to that effect has been submitted as part of the due diligence MM SIR response. See file: Page 1410 Balance Sheet revised 20100114 *Sent via email 20100115*

iii) **Statement of Cash Flows:** Please explain why the net increase/decrease in cash is not equal to the sum of cash flow from operations, financing activities, and investing activities. Please explain the deferred grant revenue and deferred matching contribution in flow and out flow in years one and two.

The statement of cash flows has been reworked as discussed in the preamble to this section. See file: Page 1410 Cash Flow Stmt revised 20100114 *Sent via email 20100115*

BUDGET

11. **Network Diagram and Detailed Budget:** In reference to Questions 30 and 45, Attachment D - Network Design, and Attachment G - Detail Project Cost, please provide a more detailed network diagram that will reconcile with the itemized costs within the detailed project budget in Attachment G. (The current version provided has a very low resolution)

expressed interest in such an arrangement, it will be made available to others on an open access basis.

6. Your current description of Year 0 in the project plan does not envision any activities. According to the application definition, Year 0 starts with the award – please clarify if that was your understanding while filling in the application.

   Please evaluate these and prior responses assuming that award starts with year 1 rather than 0.

7. If available, please provide a more detailed project plan than the one submitted with the application and the SIR.

   The project plan (Attachment E) has been revised to include additional detail. See file: Page 1410 Attach E Project Plan revised 20100115.

8. Please describe a planned network capacity at cutover and/or shortly thereafter.

   The network is anticipated to be constructed using a PON architecture with a point to point link between two PON cabinets. The current generation GPON equipment provides approximately 2 Gbps bandwidth per blade with that bandwidth typically divided between 1-32 users. At the time of cutover, the network would be expected to have at least 1 blade in two locations, each providing 2 Gbps bandwidth.

9. If available, please provide more information on past experience with similar projects (similar in size, scope, or design and implementation) among the members of the project team and (to the extent permitted by Virginia law) any potential contractors.

   Page County to provide summaries of project experience under separate cover. Additionally Icon, the firm that has been assisting in the planning process is under a continuing services agreement that will allow them to assist in the design and procurement process. Icon is experienced in the design of fiber projects of similar scope, and the president of Icon is a licensed Professional Engineer; Consulting Gateway Corporation (CGC), working in association with Icon has experience in the operation of municipal fiber networks. Keith Hill of CGC is also a licensed Professional Engineer.

PRO FORMA FINANCIALS

10. **Pro Forma Statements:** In reference to Question 50 and Attachment K – Income Statement, Attachment L – Balance Sheet, and Attachment M – Statement of Cash Flows, please provide more detail behind the financial assumptions specifically addressing the following issues:

As part of the conference call discussion between Page County and the reviewers on January 13, 2010, it was mentioned that this question may be resolved with a legible copy of the network design diagram (became illegible during the upload process). This diagram is being attached as a bit map diagram via email to Mr. McConnaughey to avoid the problems encountered when it was converted to a pdf through the Easy Grants upload process. If more information is requested after review of the diagram, supplemental responses will be included as requested. See file: Page 1410 Network Diagram.ppt *Sent via email 20100115*

12. **Detail of Project Costs:** In reference to Question 45 and Attachment G: Detail of Project Costs, please review the calculations for Outside Plan – Cables, Professional Services – Engineering Design, and Professional Services – Project Management as there seem to be mathematical errors.

    The table has been reworked to correct the mathematical errors and is being resubmitted. See file: Page 1410 Attach G Detail Project Cost revised 20100114

MATCHING FUNDS

13. **Financial Match:** In reference to Question 52, please provide more detail regarding the valuation of the $212,235 in-kind matching fund contribution and when the $200,000 cash match is expected to be received from the Commonwealth of Virginia Department of Housing and Community Department.

The County has committed to funding all of the required local match for this project ($413,640) as documented in the file PageCo 1410 Matching Funds Commitment.pdf provided to the reviewers in December. After a review of the County's response to Question 52 in the original application, we can see that the information was entered incorrectly. There is no in-kind contribution source; the amount of $213,640 should have been included as cash.

We understood at the time of application that the $200,000 grant funding request to the Virginia Department of Housing and Community Development could not be considered since it had not been awarded. That grant is based on activities benefiting the low to moderate income population for project activities that will utilize the broadband middle mile infrastructure. Based on that understanding, the County Board of Supervisors confirmed their intent to fund the 20% required local match of $413,640.

All of the application's supporting documentation of project costs have consistently reflected a total project cost of $2,068,201. The amount entered on the application, Question 44 Budget, was incorrect. The correct amount of the allowable capital costs for this project is $2,068,201.

Page County Broadband Authority
Easy Grants ID 1410
Response to MM SIR Question #9 20100118

9. If available, please provide more information on past experience with similar projects (similar in size, scope, or design and implementation) among the members of the project team and (to the extent permitted by Virginia law) any potential contractors.

The Project Team was assembled specifically to meet the requirements of this project, spanning a diverse range of areas of expertise. As previously noted, Page County is unable to provide the specific information on contractors, since we are not permitted to enter the RFQ process until the grant has been provided.

There are five major areas in which management experience and expertise are required:

- Overall project management for contracting, project analysis and communication
- Management of the grant, including timelines charting and verification of grant requirements
- Contracting of vendors and sub-vendors; system design and implementation
- Technical expertise in systems design and management
- Experience within Page County in projects of similar or greater scope

Overall project management is the responsibility of Dr. Tom Cardman, County Administrator for Page County. Dr. Cardman has over 30 years of experience in the management of grant funding and fund accounting, and current manages more than $180 million in construction and infrastructure projects. In addition, he has direct experience in IT project management as Director of Management and Budget with oversight of Information Technology for Cornell University. Dr. Cardman holds a master's degree in public administration and a doctorate in finance.

Grant Management and support will be provided by Sara Levinson, President of Corecon (established in 1990). Ms. Levinson's twenty years of experience securing government funding spans sectors such as telecommunications, information technologies, aerospace, etc. Ms. Levinson has worked with small and medium-sized enterprises as well as multinationals such as Ericsson, Harris Farinon, Johnson & Johnson, Squibb and Magna International. In her capacity as Chief Operating Officer of Consultech Canada she oversaw initiatives which required financing ranging from $1,000,000 to $20,000,000 per project, including the preparation of strategic plans and financial projections; due diligence of internal cost tracking and reporting; and completion of required grant reports. Ms. Levinson graduated With Distinction from Concordia University with a B.A. in Economics and completed an MBA at UWO's School of Business Administration.

Contracting of vendors and sub-vendors, and specific design and implementation of the mid-mile broadband solution, will be provided by David P. McClure. Mcclure has served for 15 years as President and CEO of the US Internet Industry Association, consulting in the design and implementation of broadband infrastructure, applications and management systems. He has more than six years of experience as the network engineer for two corporate entities, and has extensive experience in network integration, security and communication. As a project manager for BFGoodrich on the NASA Space Shuttle Program (1978 – 1986), he managed the planning, budgeting and implementation of projects in support of the shuttle wheel and brake systems for four shuttles. He holds a degree in Applied Science from the University of Iowa and an MBA in executive management from Kent State University.

Additional experience in system design and implementation will be provided by C. Ronald Keyser, who served for more than 20 years in systems design and support for the US Department of Defense. His core areas of expertise include requirements analysis, system design, and management of contractors to fulfill those requirements. Keyser was appointed to the Broadband Authority for Page County in 2009.

Page County and its managers are currently responsible for a number of similar grant projects, including a Landfill Compliance and Operation contract for more than $13 million, which used bid contracts via a public procurement protocol for engineering, construction and inspection to bring the landfill into compliance and for current ongoing operation and maintenance of cell closure and opening; a project to design and complete two new schools for more than $60 million, including fiscal authorization, capital procurement through public debt procedures, advisement on value engineering, management of procedure for issuance of certificates of occupancy for each building; and the design and development of new county administrative offices, which will entail land acquisition, facility design, bidding process for construction, cash management of project.

Additionally Icon, the firm that has been assisting in the planning process is under a continuing services agreement that will allow them to assist in the design and procurement process. Icon is experienced in the design of fiber projects of similar scope, and the president of Icon is a licensed Professional Engineer; Consulting Gateway Corporation (CGC), working in association with Icon has experience in the operation of municipal fiber networks. Keith Hill of CGC is also a licensed Professional Engineer.

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1.3 Survey Methodology

A total of 2500 residential surveys were distributed from residential lists provided by County personnel. Mailing address lists for County businesses were provided and a total of 500 business surveys were distributed. Public school district officials and higher education personnel were interviewed via telephone for more detailed responses.

Residential and business input was provided from both mailed and on-line surveys. A two-page survey (see Appendix A, Section 7.0) polled basic demographic data, Internet usage habits, method of access (e.g. dial-up, DSL, cable modem), satisfaction with current providers, and monthly cost of access to the Internet. The survey could be completed and returned postage-paid with a minimum of user effort. The mailed survey was augmented by an online survey version. The domain name of www.VAbroadbandstudy.com was purchased and used to make an exact replica of the mailed survey available for easy online entry. The results of the online survey are combined with the mailed survey results.

A targeted survey response rate of 10% was anticipated, returning a statistically valid sample size at a 95% confidence level. Response to the Page County surveys was much higher however, resulting in return rates of 32% (797) residential and 17% (86) business. The high response rate for the residential surveys is attributed to the efforts of County economic development personnel and school district officials in a targeted distribution of surveys to students. This effort ensured that families with children living at home were well represented in the survey process.

1.4 Local Internet Services

Residential

Subscription Internet access is available to all residents via dial-up service at pricing as low as $10 per month from national providers. Local providers such as Shenandoah Telephone (Shentel) offer dial-up access on a set number of hours or unlimited access at pricing from $17 to $25 per month. Access via Digital Subscriber Line (DSL) and cable modem are available in some areas of the County at prices ranging from $25 to $45 per month for residential service. Wireless access is available in most areas in Shenandoah at prices ranging from $30 to $65 per month, and in some areas of Luray and Stanley for $40 to $80 per month. Access via satellite provider HughesNet is available to all residents and businesses in the County with download speeds of 700 Kbps to 1.5 Mbps, ranging in price from $60 to $80 per month. WildBlue is an additional satellite provider targeting rural subscribers, with a choice of three tiers

delivering download speeds of 512 Kbps to 1.5 Mbps, and ranging in price from $49.95 to $79.95 per month. Satellite subscribers must either purchase equipment at costs in the hundreds of dollars or pay higher rates which include the necessary equipment.

Costs vary widely when comparing providers and services by speed of service. Residential service is typically greatly oversubscribed[5], and speeds are typically advertised as "up to". All products are not available to all County residents, and in most cases speeds available are dependent upon the subscriber's distance from the provider's facility or equipment. The exception to this is satellite Internet service which requires a clear view to the southwestern sky. In addition to regular monthly fees for service, subscribers may be subject to one time fees for installation or equipment. The costs for services by speed of service are as follows:

Table 1.41: Current Residential Internet Options (rounded to nearest dollar)

Speed (down/up)	Dial Up (unlimited)	Wireless Luray, Stanley (Limited areas, LOS only)	Wireless Shenandoah	DSL (assuming phone service)	Cable (assuming cable service)	Satellite
Max 56 Kbps	$10-$25					
256 Kpbs/256 Kbps		$40	$30			
512 Kbps/512 Kbps		$50	$35			
700 Kbps/128 Kbps						$60
768 Kbps/768 Kbps		$60	$45			
1 Mbps/200 Kbps						$70
1 Mbps/1 Mbps		$70	$55			
1.5 Mbps/200 Kbps						$80
1.5 Mbps/512 Kbps				$25		
1.5 Mbps/1.5 Mbps		$80	$65			
3.0 Mbps/640 Kbps				$35		
Up to 3.0 Mbps (best effort service, no guarantee)		$50				
5.0 Mbps/768 Kbps				$45		
6.0 Mbps/384 Kbps					$43	
Additional Fees (Set-up/Equipment)		$300 one time	$150 one time		*Optional* modem rental $3/mo	$200 one time

[5] The practice of providing much lower total available bandwidth than each user is purchasing individually. If, for example 100 customers were sold "up to" 1 Mbps, and the ISP supplies only 1Mbps total, the service is oversubscribed 100 to 1. In periods of low or moderate usage it may work well, but provides very slow service during peak periods.

Business

Subscription Internet access is available to all businesses via local and national dial up service providers at pricing similar to residential access. Costs to business customers for faster-then-dial up service are typically higher than that offered to residential customers due to increased support and quality of services agreements. DSL access is often used by small businesses that have few users and are not 'data intense', primarily due to cost limitations. These businesses must be able to operate with the amount of bandwidth available at any given moment. Wireless Internet service is also available throughout most of Shenandoah and reportedly in some areas of Stanley and Luray. Only businesses in Shenandoah reported using wireless access in response to the market survey.

Many medium to large (and even some small) businesses can satisfy their needs with a full or partial T1 line that they can portion between voice and data services. Depending upon the number of telephone lines and frequency of use, voice traffic may use a relatively small percentage of bandwidth. Greater amounts of bandwidth are required for transferring data files, frequent Internet use and connecting branch offices. T1 lines offer dedicated bandwidth to each user with higher reliability than DSL. T1 lines are available throughout most areas of the County at costs typically ranging between $500 and $1000 per month, or in channel increments at lower cost. Service is provisioned over Sprint/Embarg's copper lines, although service agreements and Internet access may be provided by other providers such as AT&T. Very high bandwidth needs (e.g. greater than 10 Mbps) can be met currently by a full or partial DS3 (45 Mbps) at rates well above $1500 per month. The table that follows details the service levels available and pricing in a speed comparison fashion.

Table 1:42: Current Business Internet Options (rounded to nearest dollar)

Speed	Dial Up	Wireless Stanley, Luray (Limited areas, LOS only)	Wireless Shenandoah	DSL	Cable	Satellite	T1
Max 56 Kbps	$10-$25						
256 Kpbs/256 Kbps		$40 (small) $105 (large)	$100				
512 Kbps/128 Kbps				$30			
512 Kbps/512 Kbps		$50 (small) $149 (large)	$145				
768 Kbps/768 Kbps		$60 (small) $214 (large)	$213				
1 Mbps/1 Mbps		$70 (small) $264 (large)	$314				
1.5 Mbps/300 Kbps						$100	
1.5 Mbps/384 Kbps				$50			
1.5 Mbps/512 Kbps							

Speed	Dial Up	Wireless Stanley, Luray (Limited areas, LOS only)	Wireless Shenandoah	DSL	Cable	Satellite	T1
1.5 Mbps/1.5 Mbps		$80 (small) $414 (large)	$466				$1000+
3.0 Mbps/512 Kbps				$70			
3.0 Mbps/640 Kbps							
5.0 Mbps/640 Kbps				$85			
5.0 Mbps/768 Kbps							
6.0 Mbps/384 Kbps					$99		
Additional Fees (Set-up/Equipment)		$300 one time	$150 one time		*Optional* modem rental $3/mo	$600 one time	

1.5 Residential Use and Unmet Demand

Internet Access

Residential survey respondents ranged in age from under 20 to over 65 years old. Over 77% of responses represented working age adults in the 20 to 59 age range. Response from citizens aged 60 and above was proportionate with census demographic characteristics for those age groups. Responses from families with children at home represented 64% of the survey group. The ages of children living at home are represented as follows:

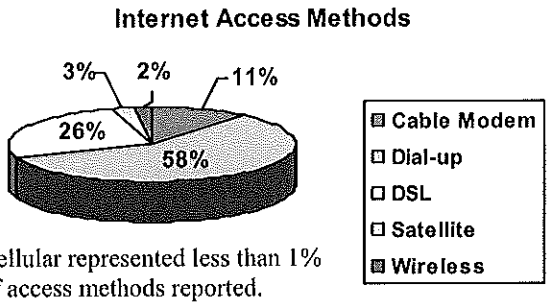
Under 5	5 – 17	18 or older
20%	81%	20%

Computers are in the homes of 86% of survey respondents, and 80% of the total survey group subscribes to an Internet access service. These overall percentages in Page County are representative of national estimates, but a comparison by age group highlights significant disparity between young adults aged 20 to 34 and older generations.

Computer Ownership and Internet Access By Age Group		
Age Group	No Computer in the Home	No Internet Access
Under 20	11%	17%
20 - 24	19%	25%
25 - 34	11%	20%
35 - 44	8%	13%
45 - 54	10%	19%
55 - 59	13%	17%
60 - 64	16%	16%
65 or Older	42%	45%
Families with Children at Home	9%	16%

It should be noted that 84% of those aged 60 to 64 are actively accessing the Internet from home, yet only 55% of those aged 65 or older have a computer and an Internet connection.

The majority of Internet users (58%) are subscribing to a dial-up Internet service. This is in sharp contrast to national estimates of between 72%[6] and 78% of active home Internet users going online via a broadband connection[7].

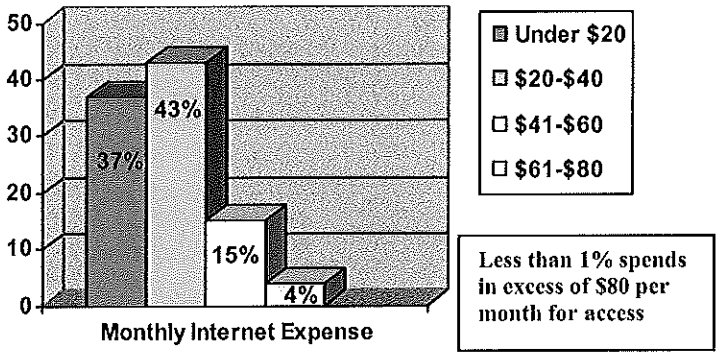


Cellular represented less than 1% of access methods reported.

Residents were asked to assess their Internet access speed as Adequate, Inadequate, or More than Needed. The majority (51%) described it as Inadequate to meet their needs. The majority of those dissatisfied with the speed of their Internet connection are using dial-up for access, but significant percentages of broadband subscribers also describe their access speeds as inadequate.

Residential Dissatisfaction with Current Internet Speed (Bandwidth) by Access Method			
Dial-Up	Satellite/Cellular	Digital Subscriber Line	Cable Modem
78%	36%	12%	12%

A majority of dial-up subscribers is interested in moving to a faster-speed service, yet 56% state services are not available to them. Cost is also a limiting factor however, as 30% state higher speed services are too expensive. Dial-up subscribers are currently paying below or slightly above $20 per month for service.



Internet access in the home is important to the overwhelming majority of residents; 53% rate access as Very Important and another 30% describe it as Somewhat Important. This importance is quantified as a

[6] Source: *Over Half of U.S. Households Subscribe to Broadband Internet*; Leichtman Research Group, Inc. (LRG), Press Release 7 June 2007, http://www.leichtmanresearch.com/press/060707release.html
[7] Source: *Over Three-Fourths of U.S. Active Internet Users Connect Via Broadband at Home in November*; Nielsen/NetRatings, 12 December 2006, http://www.netratings.com/pr/pr_061212.pdf

vast majority (62%) of residents is using the Internet to work from home and/or to complete school or job training course work.

Using the Internet for Work or School	
	% of Internet Users
Use the Internet to Work From Home:	23%
Internet Access Required to Complete Coursework for School or Job Training:	39%
Using at least once per Week	64%
Using at least once per Month	36%
	% of Families with Children at Home
Using the Internet to complete school work:	51%

The many activities that residents are performing online underscore the high value placed on access, and the desire for higher-speed access methods. Email has long been the most frequently used Internet application by citizens of all ages. In more recent years activities such as obtaining directions, researching purchases, and performing financial transactions have increased in popularity. Activities that influence social and economic changes such as online learning, job search, access to health and medical information and selling products or services online are steadily gaining in popularity as more Americans are exploring the Internet's vast reach. Large majorities of residents are turning to the Internet for access to news and community information.

Residential Online Activities in the Past 6 Months	
Internet Activity	**% of All Residents**
Visited a news website	65%
Purchased products or services	62%
Searched for travel related information	58%
Searched for health or medical information	55%
Visited a state or local government website	48%
Searched for info related to school work	48%
Performed a financial transaction with a bank	35%
Researched a major purchase	34%
Downloaded or watched video online	32%
Searched for a job	23%
Communicated with a teacher	17%
Took an online course	12%
Sold products or services	11%

Wireless Internet access is becoming more widespread, increasing consumer awareness of the service. Where once wireless service could be found only in retail locations such as coffee shops, hotels, airports, and some libraries, wireless wide area networks are becoming more common today. Additionally many new computers (both desktop and laptop) are equipped with standard wireless network cards, enabling ease of use. A large number of consumers have adopted the use of wireless home networks as an alternative method to reach computer work stations, and for using portable devices anywhere in the home. Page County residents were questioned as to their likelihood of subscribing to an affordable wireless high-speed Internet service if it were available to them, and the response was overwhelmingly positive.

Residents' Interest in Affordable Wireless Internet Access	
Very Likely to Subscribe	59%
Somewhat Likely to Subscribe	23%
Not Likely to Subscribe	13%
Unknown – no response	5%

Pay TV Services

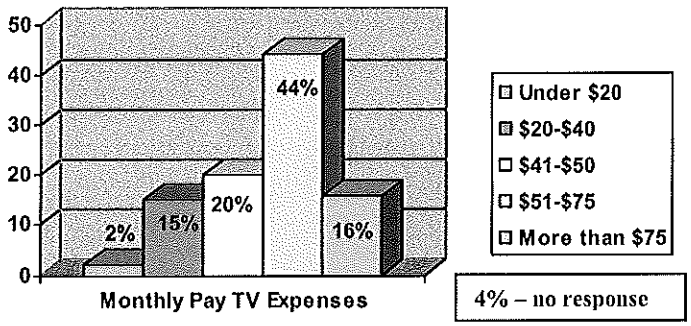
Nationally, approximately 85% of households subscribe to a pay TV service. Cable's share as of December, 2006 is estimated at 58.8% according to the National Cable and Telecommunications Association industry statistics[8]. Subscribers located in areas with population densities of 25 homes per mile or less are typically not served by cable systems and therefore are more likely to subscribe to satellite services such as DirecTV. The local cable provider Comcast (previously Adelphia) has a franchise agreement to serve the County, but does not serve all households. Of the residential survey participants, over 90% report subscribing to a pay TV service, primarily via satellite.

Pay TV Subscribers	
Pay TV Method of Access	**% of Responses**
Cable	30%
Satellite	61%

The majority of pay TV subscribers (69%) receive expanded programming consisting of local off-air channels and analog cable programming. Minimum basic programming consists typically of local off-air channels; public, education and government channels; and shopping networks with perhaps a cable channel such as The Weather Channel. Several complaints were received regarding poor reception in the County, and the inability to receive Harrisonburg broadcasts.

[8] Source: *National Cable and Telecommunications Association*; Cable Industry Statistics, as of December 2006; www.ncta.com

Monthly expenses for Pay TV service are much higher than for Internet access; the majority of subscribers are spending between $51 and $75 per month for service.



Voice Services

Voice communication services include regular wired service (also known as 'plain old telephone service' or POTS), cellular, and the newer voice service using the Internet (Voice over Internet Protocol or VoIP) as the transport medium. Nationally, more Americans are dropping regular wired service in favor of one or both of the other services presumably as a way to reduce monthly expenditures. The adoption of VoIP services is an important issue, as currently Universal Service Fees and fees for e911 may not be collected on calls made over the Internet depending upon the provider used. Residential subscriber percentages and monthly rates for voice services are reported as follows:

Voice Communication Methods and Spending						
Voice Service	% With Service	% Without Service	Monthly Expenditure			
			No Charge	Under $35	$35 to $75	More Than $75
Regular (Wired) (4% unknown)	92%	4%	-	36%	51%	13%
Cellular	79%	21%	-	19%	45%	36%
Voice over Internet*	11%	89%	15%	51%	34%	-

*Includes responses from faster-than-dial-up Internet subscribers only. Service percentage based on numbers of Internet subscribers only.

Industry estimates of VoIP penetration vary widely, but analysts do agree that this form of voice communication is expected to increase in popularity at a rapid rate. One of the more aggressive estimates

is the prediction that VoIP will be used in 62% of broadband households by 2010[9]. Because of the availability of access at no charge using the Internet only (calls do not ever touch the telephone network) the exact numbers of nation-wide subscribers are not known. Hybrid varieties of VoIP that pass calls using the Internet and then connect to the switched telephone network are becoming more widely adopted as cable and telephone companies roll out new packages of fixed price service for unlimited local and long distance calls. Neither Embarq nor Comcast are offering VoIP services in Page County at this time. Comcast does offer a 'Digital Voice' product in markets where they have upgraded the cable system infrastructure. National providers such as Vonage offer attractive packages of unlimited calling available to Page County high-speed Internet subscribers.

1.6 Overall Residential Satisfaction

Overall, residents in the County are satisfied with their current voice, video, and Internet providers; however, 45% dissatisfaction with current Internet providers or *services available* cannot be ignored. Numerous comments echoed frustration with not having a choice of providers for any of the communication technologies – voice, video or broadband Internet.

	Satisfaction with Current Providers		
	Telephone	Video	Internet
Satisfied	67%	47%	36%
Not Satisfied	19%	24%	45%
No Opinion	14%	29%	19%

In response to the last survey question **"What changes or improvements to communication technology in Page County would best meet your needs?"** 45% of the residential survey group offered comments. A complete list of the comments is included in the Appendix section of this report. In general, the majority of comments addressed the following issues:

- Desire for high-speed Internet access
- Poor cell phone reception
- Poor off-air TV reception
- High cost of all services
- Desire for bundled service offerings (telephone, Internet, TV, and cell for one price)
- Frustration with lack of providers to choose from

[9] IDC, subsidiary of International Data Group; *IDC Anticipates 34 Million More Residential VoIP Subscribers in 2010*; Press Release 13 June 2006; http://www.idc.com/getdoc.jsp?containerId=prUS20211306

1.7 Business Use and Unmet Demand

Internet Access

Respondents to the business survey are primarily small businesses, employing 1-4 persons with annual revenue or sales of $50k - $500k per year. The size and type of responding businesses are represented in Table 1.7-A on the following page.

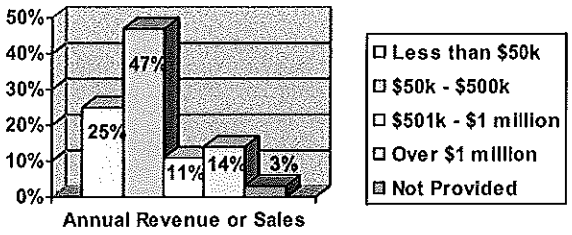
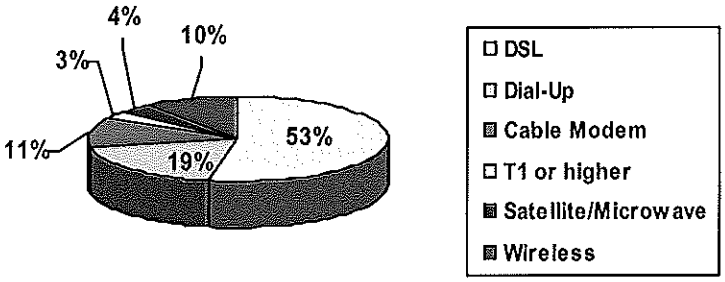


Table 1.7-A: Businesses by Type and Number of Employees

% of Response	Business Type	Number of Employees								
		None	1-4	5-9	10-19	20-49	50-99	100-249	250 or more	Total
8%	Accounting/Architectural/Engineering		3 7%	2 10%	1 16.6%	1 15%				7
1%	Agricultural/Forestry/Mining		1 2.2%							1
19%	Business and Personal Services		13 31%	1 5%		2 35%				16
5%	Communication/Technology	1 16.5%	1 2.2%	1 5%		1 15%				4
5%	Contractor or Construction		3 7%	1 5%						4
2%	Education	1 16.5%		1 5%						2
7%	Finance/Insurance/Real Estate	1 16.5%	4 10%	1 5%						6
10%	Healthcare		1 2.2%	2 10%	3 50%			2 100%		8
2%	Hotel/Lodging	1 16.5%	1 2.2%							2
1%	Non-classified		1 2.2%							1
2%	Non-profit			1 5%			1 33%			2
30%	Retail Trade	2 34%	12 29%	9 45%	1 16.6%	2 35%				26
2%	Tourism				1 16.6%		1 33%			2
6%	Wholesale Trade		2 5%	1 5%			1 33%		1 100%	5
	Total:	**6**	**42**	**20**	**6**	**6**	**3**	**2**	**1**	**86**
		7%	**49%**	**23%**	**7%**	**7%**	**4%**	**2%**	**1%**	

The Internet is in use by 81% of all businesses. By number of computers, most (60%) report 1 to 5 workstations with access to the Internet. Digital Subscriber Line (DSL) is the most commonly used method of access among all businesses, regardless of annual revenue or numbers of employees. Current DSL and cable modem bandwidth/speed is considered adequate to meet the needs of 76% of businesses using those methods of access. Access methods in use by all businesses are as follows:

Business Method of Internet Access



Dial-up access is still in use by 19% of businesses; these businesses employ no more than nine persons but nearly half report revenue in excess of $50,000 annually.

This method of access does not meet the needs of 62% of those businesses – connections are too slow and do not provide enough bandwidth. Reasons reported for not subscribing to higher speed access include services not available, but the majority indicates higher speed services are too expensive.

Access to the Internet is considered Very Important or Critical to 58% of businesses surveyed. Business end-users do not seem to know what speeds or amount of bandwidth they are receiving. Overall, the majority state their current method of Internet access is adequate to meet their needs, but 31% assess their current Internet access as inadequate. The majority of businesses using dial-up state speeds are inadequate (62%), and 24% of broadband users (DSL and cable modem) are also dissatisfied with the speed (bandwidth) they are receiving. The majority of dissatisfied businesses are located in Luray.

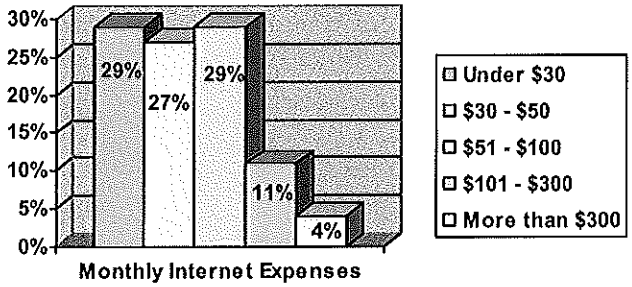
Only 19% of all businesses with Internet access are Very Satisfied with their current provider; all others express various levels of dissatisfaction.

Satisfaction with Current Providers	
	% of All Internet Users
Very Satisfied	19%
Somewhat Satisfied	70%
Somewhat Dissatisfied	7%
Very Dissatisfied	4%

Dissatisfaction is primarily with connection speed and lack of bandwidth. The majority is subscribing to service from local incumbent Embarq. The most frequent comments indicate dissatisfaction with DSL network speeds and high price.

Reasons for Dissatisfaction with Current Providers	
	% of All Internet Users
Poor connection speed, not enough bandwidth	50%
Price too high	37%
Poor customer service	9%
Service is unreliable	16%
Problems with Email	4%

Businesses that currently have no Internet access or do not subscribe to faster-than-dial-up service indicate that price of services is the primary reason, but over 30% of these businesses are simply not interested. Only 17% report services are not available to them.

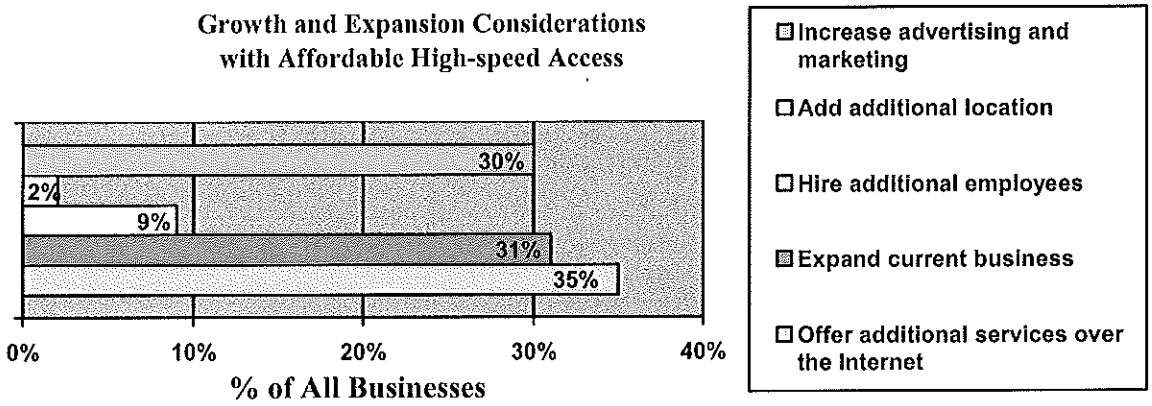


Current monthly expenses for Internet access do not exceed $50 per month for the majority (56%) of businesses. Only 4% of all businesses report Internet expenses in excess of $300 per month.

Although 81% of all businesses currently have Internet access and consider access important, it appears many County businesses are not taking full advantage of all the Internet has to offer. Business use of many Internet applications is lower in Page County than that reported in other communities. Some businesses in the County have incorporated the Internet into the daily operation of the business beyond just communicating with employees and customers through email. Tasks such as accounting and banking that can be conducted via online access save the business time and creates efficiency. These efficiencies contribute to the importance of cost-effective and dependable Internet access. The table that follows illustrates how Page County businesses are using the Internet – currently and expected future use. The applications targeted for future use and the percentage of businesses that anticipate incorporating these additional uses into their operations are indicators of the incremental speed and bandwidth that will be required in the near future.

How Businesses Are Using the Internet Current and Future Interest		
Internet Use	**Current Use %**	**Anticipated Future Use %**
E-Mail	76%	8%
Communication	70%	8%
Purchasing materials or services	66%	8%
Research	59%	9%
Customer service	50%	16%
Transferring data files	43%	15%
Accounting/Banking	41%	12%
Advertising	41%	20%
Hosting your web site	27%	**24%**
Distance Learning	21%	17%
On-line sales	19%	**20%**
Training	17%	**24%**
VPN connections	8%	14%
Video-conferencing	7%	**22%**
Telemedicine	5%	8%
Voice service	2%	**21%**

In contrast to lower-than-expected Internet application usage, 77% of all business survey respondents identified one or more growth opportunities their business would consider if an affordable high-speed Internet service were available to them. The higher percentage of businesses that would consider offering services over the Internet indicates future growth in e-commerce in Page County. Additionally, it appears a strong percentage of businesses understand the value of Internet marketing. Growth and expansion opportunities identified are as follows:



Wireless Internet access has been a rapidly evolving technology with new standards released well ahead of consumer adoption. Until recently, uncertainty existed among consumers as to the security of using this technology to transmit sensitive data. Businesses are beginning to view wireless access as a cost-effective means of connecting branches and accessing the Internet. A majority of all business survey respondents (76%) indicate they are very to somewhat likely to use wireless high-speed Internet access

service if it was available to them. Of businesses that state current Internet speeds and bandwidth is inadequate, nearly all are interested in high-speed wireless access to meet their bandwidth needs.

Voice Services

Businesses were surveyed as to the phone services they are using and their monthly expenditure for each. Most businesses maintain regular telephone lines (99% overall), and the majority are spending between $101 and $300 per month for service.

Business Voice Communication Methods and Spending						
Voice Service	% With Service	% Without Service	Monthly Expenditure			
			No Charge	Under $100	$100 to $300	More Than $300
Regular (Wired)*	90%	6%	-	45%	43%	12%
Cellular	65%	35%	-	54%	36%	10%

*4% unknown – did not identify

Business cell phone use is not as high in Page County as in other communities where typically 80% or more subscribe to service. While over one-half are spending less than $100 per month, the rest are spending considerably more. End-users provided numerous comments that expressed frustration with poor cellular coverage throughout the County.

Business Voice Communication Methods and Spending							
Voice Service	% of Internet Subscribers with Service	% Without Service	Monthly Expenditure				
			No Charge	Under $35	$35 to $45	$46 - $100	Over $100
Voice over Internet (VoIP)	13% of Internet subscribers	87%	11%	22%	11%	34%	22%

The greatest advancement in the use of technology for businesses to date is voice over the Internet (VoIP) phone service. Voice traffic is digitized and transported along with data, greatly reducing per call spending. Incumbent telephone providers realize savings as well, and service is available to businesses from local and national providers. Only 13% of businesses with Internet access have adopted this method of voice service.

Like residential VoIP, service is available in a variety of ways. Service for voice calling using only the Internet and never entering the public switched telephone network (PSTN) is available from the national provider Skype. A number of plans are available from this and other providers offering reduced monthly charges for calling plans that include a combination of Internet and PSTN use for voice service.

Businesses nationwide are under increasing pressure to reduce monthly spending on voice communication as most are subscribing to mobile (cellular) service in addition to fixed service at the business's physical location. Business adoption of VoIP nationwide is expected to increase exponentially as a method of reducing high communication costs. Service is increasingly becoming available from facilities-based providers offering higher levels of security and support businesses demand. Voice service is not currently available from incumbent DSL or cable service providers in Page County.

In response to the last business survey question **"What changes or improvements to communication technology in Page County would best meet your needs?"** 38% of the business survey group offered comments. A complete list of the comments is included in the Appendix section of this report. In general, the majority of comments addressed the following issues:

- Desire for increased Internet access speeds, more bandwidth needed
- "Broadband" access specifically requested
- Affordable access options
- DSL or cable modem availability to more areas
- Better cell phone coverage throughout the County

1.8 Education and Healthcare Use and Unmet Demand

When taking steps to make your community attractive to businesses considering relocation options, family quality of life issues will typically weigh-in equally as important as having the right business climate. In addition to recreation and cultural entertainment attractions, two other major considerations are a community's quality of health care and education.

Education

K-12 schools and higher education institutions are eligible to obtain Internet access through NetworkVirginia at state-negotiated rates with local service providers. The Page County school district purchases a partial DS3 (16 Mbps) Internet connection for distance learning and Internet access that is shared between each of the schools. The connection is received at Page County High School and transmitted through a point to point wireless system to each school, relayed off a mountain tower. Bandwidth is allocated between schools on a first come, first served basis. Fiber optics will be used to connect to the new Page County High School. Internal network connections are wired in most schools,

with some wireless in use such as for the mobile computer labs. Computers are located in all classrooms and teachers are actively utilizing technology.

The Page County School District has been actively investing in and implementing technology over the past ten years. A significant technology investment has been made to equip teachers with tools for presentation and instruction. Teachers are using Smart Boards and most recently, small tablet-sized boards to increase their mobility in the classroom. Students have access to computer stations and labs in the classroom. Even third-graders have experienced the use of Palm Pilots to enhance learning. Students attending Page County schools today are tomorrow's tech-savvy adults.

Videoconferencing is used between Luray High School and Page County High School for sharing classes between the schools. While this is an optimum use of technology to more adequately allocate teaching time, videoconferencing uses a greater amount of network bandwidth. Distance learning video programs are available for teachers to use in the classroom, but increased use of these powerful learning tools threaten the availability of precious bandwidth – the School District works constantly to conserve bandwidth shared between all schools. Teachers are ready to utilize additional technology resources for educating students should the bandwidth become available to them. The Page County School District could greatly leverage learning opportunities through technology with an increase in bandwidth at affordable rates.

Lord Fairfax Community College maintains a satellite location in Luray. The LPCC (Luray-Page County Center) current infrastructure includes two T1 links purchased through Network Virginia. The two T1 links provide a total of 3 Mbps of connectivity to support a distance learning room and two classrooms. This amount of bandwidth is sufficient for current needs, but future needs will require an upgrade to higher speeds.

Survey response from the Education sector of the business community represented only 2% of the survey group, and appears to be small businesses working with preschool age children. While currently these businesses have either no access or dial-up access only and do not consider it important to their business, each expressed interest in an affordable wireless service.

Healthcare

Page Memorial Hospital located in Luray serves patients located throughout Page County. The hospital campus includes a physician clinic, and rural health clinics are located in Stanley and Shenandoah. Additionally, the hospital owns and operates a home health agency located off-campus in Luray. The hospital connects to the on-campus clinic via fiber, and subscribes to 5 Mbps DSL service for a connection to the Internet that is currently adequate to meet their needs. Internally, wireless is used in some areas of the hospital for local area network connections (e.g. mobile cart units for patient care). Off-campus clinics and the home health care site connect to the hospital via a 1.5 Mbps DSL service. Access to the hospital servers that house software and record systems is through a virtual private network (VPN) connection.

A secure T1 (1.5 Mbps symmetric bandwidth) connection to University of Virginia (UVA) Health System allows the hospital to utilize teleradiology and telemedicine services. Teleradiology allows the hospital to transmit images to be read by UVA physicians during nights, weekends, and for difficult cases. Telemedicine allows patients to be seen by UVA physicians via real-time video streaming from the Luray facility. Currently the hospital has not implemented the use of electronic medical records, but future plans envision this service implemented either by hospital staff or through a private service provider.

Healthcare providers represented 10% of the business survey group, and nearly all subscribe to DSL service. This business segment reported mixed reviews of satisfaction with current speeds; one half describes their current speed of access adequate to meet their current needs, with the remainder subscribing to 1.5 Mbps service that is inadequate to meet current needs. A gap exists however, in that doctors do not have universal access from their homes as high-speed service is not available in all areas.

Advanced applications in telemedicine, the ability to view higher resolution radiology images and the adoption of new technology and applications by the hospital and local health providers will require higher bandwidth access to the region.

1.9 Gap Analysis

DSL service appears to be unavailable to a large majority of residential consumers. Market survey results indicate current subscribers are all located within a 2-3 mile radius of the telephone central office, the typical service range and maximum reach of DSL equipment. It does not appear that DSL remote equipment has been deployed that would extend the reach to additional subscribers. While dial-up

subscribers are located throughout all of Page County, the largest concentrations of dial up subscribers are located to the north of Luray, through Rileyville and extending north to the Page/Warren County line. Numerous comments from both residential and business subscribers indicate a strong demand for DSL service specifically. Residential DSL subscribers appear to be satisfied with the current service provider; the majority of businesses are subscribing to DSL service, but dissatisfied with current network speeds.

Businesses requiring higher speed access immediately account for 31% of survey respondents and 81% of all businesses express some level of dissatisfaction with current providers. Although the majority of business users were unsure as to how much bandwidth they are currently receiving, the greatest amount of frustration (50%) is attributed to slow speeds and a lack of bandwidth. The majority of businesses dissatisfied with current providers are located in the Luray area.

Local wireless service providers Shenandoah Wireless Broadband Authority (SWBA) and Rural Broadband Network Service (RBNS aka highspeedlink) provided service area coverage information for this report. The stated SWBA coverage area was in agreement with survey respondents subscribing to high speed wireless service as all are located in Shenandoah. The coverage area provided by RBNS indicated wireless service was available to many residents and businesses located outside of the current DSL coverage area. The stated coverage area was in contrast to survey respondents indicating high speed services were not available to them. The results of this analysis indicate wireless coverage does not extend beyond the current DSL service area. Further conversations with RBNS revealed service is dependent on line of sight to serving towers. Areas north of Luray and Rileyville in particular are beyond the reach of current equipment.

The numbers of Page County citizens subscribing to cable service is only 30% of households, and only 11% of both residents and businesses subscribe to cable modem service for high-speed Internet. With low penetration rates for cable TV service, it is unlikely the current cable provider would invest in extending cable infrastructure to reach additional subscribers. Additionally, the cost of cable modem Internet service for non-cable TV subscribers is $10 per month higher than for cable subscribers and not likely to attract dial-up users currently paying $20 per month or less.

Price will be a limiting factor in decisions to purchase higher speed services. The majority of residents using dial-up services are dissatisfied with slow speeds, but nearly all spend at or below $20 per month for service. While most state higher speed services are not available to them, 30% stated high-speed options are too expensive. Of those businesses that are dissatisfied with current providers and service,

37% cite price as a reason. Of those businesses citing price dissatisfaction, 53% are currently paying between $30 and $50 per month for DSL, wireless or cable modem service. This indicates significant pressure for new broadband access methods at pricing below current service pricing.

Schools exhibit the greatest bandwidth needs, primarily to access and distribute distance learning resources among individual schools. Current Internet connections (partial DS3, approximately 16 Mbps throughput) are sufficient at this time for Internet access, but currently bandwidth is being conserved. There are distance learning resources available to the schools that can not be utilized without an increase in bandwidth, but current budgets limit increased spending for higher speeds.

The public library branches in Luray, Stanley and Shenandoah could benefit from access to affordable higher speed services, both for connecting to the main library circulation system in Harrisonburg and for Internet access for public computers. The Luray and Shenandoah branches connect to Harrisonburg via a 512 Kbps frame relay connection, and the bandwidth is strained. Since the library circulation system is accessed through the network connection, staff in each library needs a portion of the bandwidth reserved for their use with the remainder sufficient to support fairly constant use by patrons. Beyond bandwidth for Internet access, the libraries are in need of updated, faster computers. Current library hours of operation are during normal working hours, with the exception of one night per week and limited hours on Saturday. The Stanley branch is not open at all on the weekends. This limits access by patrons who have no computer or Internet access at home, particularly students who need the access to complete school assignments and job seekers.

Municipal facilities currently need dedicated bandwidth between sites, including public safety, to enable a secure, cohesive network and Internet access distributed between all facilities. While Internet access is not currently an issue, connectivity between sites using current available technologies is slow and the bandwidth inadequate. Additionally, municipalities are currently unable to offer a number of e-government services that would improve service to the communities.

1.10 Response mapping

Most respondents to the residential and business surveys provided their physical address for mapping purposes. Addresses were geocoded and using GIS techniques, responses to various survey questions were overlaid onto the Page County base map.

Figure 4 on the following page identifies the physical location of all residential and business survey respondents that provided address information, and their type of Internet connection. The large numbers of dial-up subscribers are easily identified by the blue dots. DSL subscribers (tan dots) are concentrated within the 2-3 mile areas surrounding the telephone central offices near the center of each town. All wireless subscribers are located in Shenandoah.

Figure 5, page 60, identifies residents using the Internet for school or job training (white squares) or to work from home (yellow squares). All residents and businesses that are dissatisfied with current providers and services are represented by black dots. The greatest concentrations of dissatisfaction appear in Luray and continuing north through Rileyville.

Figure 6, page 61, depicts the interest in high-speed wireless service by both residents and businesses. The largest concentration of wireless interest by businesses is in Luray, while residents in all parts of the County indicate they are very to somewhat likely to subscribe if service were available. Interestingly, there is a large amount of wireless interest in Shenandoah where wireless service is currently deployed.